# EDUCATIONAL REVIEW

*MARCH, 1904*

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## I

## HERBERT SPENCER

Most of these reminiscences are copied nearly literally from a diary kept in London in June, 1879, and were included in an account of a day spent wandering about Richmond, at Spencer's invitation, with him and John Fiske.

"The portrait published by the Appletons gives a good idea of the full face, but rather exaggerates the brow and suppresses the remarkably long and full upper lip. In profile, his delicate nose is decidedly aquiline. His facial angle must be nearly 90. At first glance his face appeared old-fogeyish, and not striking; but in conversation it lights up as few faces do, and his rather large, soft hazel eyes have a very sympathetic glance." In one paper, since his death, his eyes were spoken of as blue. The truth probably is that he had the eyes which vary in color with the degree and direction of the light striking them, and which I have seen in more than one person of exceptional mind —and never that I can recall, in a commonplace person. "He is tall and spare, and appears delicate. His hair and side whiskers are peculiar. He is not one of the 'long-haired,' but at the sides behind the ears the hair forms distinct ringlets, and so do the whiskers, tho there is nothing intrusive in either. Both are very slightly sprinkled with gray."

"He dresses conventionally, but unnoticeably. Has no more scorn than Englishmen in general for the chimney-pot hat. Seems to appreciate all the good things of this life, and to indulge in them as far as his rather poor health permits.

"He told us that as he could not sleep at sea, and especially as he could not stand the excitements to which he would inevitably be subjected in America, he should never go there."

This accounts for the unsociable attitude he was obliged to maintain during the visit which he subsequently was induced to make.

"He said that a formal dinner was a great deal for him to undertake, and that tho he enjoyed it as often as his strength permitted, he had to deny himself, as a rule, and asked us to substitute another day in the country for even an informal dinner that we proposed.

"He takes a joke in the most sympathetic way. On his telling us that he had no memory whatever for dates, and little for personalities—that facts left his mind as soon as he was thru with them for purposes of generalization, I plead guilty to the same weakness regarding dates; but Fiske said that he remembered, without conscious effort, nearly all dates that he read or experienced, and nearly all persons that he met. On this I said to Spencer: 'Let us fall upon Fiske, and slay him!' And at this very temperate little joke Spencer laughed like a child.

"*Apropos* of his weak memory for persons, he told us in the most ingenuous way of his having taken a lady down to dinner twice within a year, and meeting her a third time at the end of the second year without remembering her at either of the later meetings: 'And yet,' he said, 'she remembered me perfectly.' When I said: 'But, Mr. Spencer, perhaps if it had occurred to her meantime to write the *Synthetic philosophy*, you would have remembered her, too,' the view of the case struck him as entirely new, and amused him as much as my proposed attack on Fiske. He has a very cordial, tho not boisterous laugh, and a very bright and sympathetic smile." It always suggested the glitter of silver. I never knew but one other like it: that of another remarkable—tho, of course, less remarkable, man—the late General Russell, the eminent schoolmaster of New Haven.

"After speaking of, as a strange thing, a recent case of perfect *ennui* in a person who had 'all the objects of ambition,'

and instantly taking my suggestion that wealth and position, etc. (which were all that he had enumerated), implied a rather limited range of ambition, he said that he believed that the only unfailing source of satisfaction is finding one's self equal to the accomplishment of one's undertakings—which, of course (one or the other of us remarked), involves having undertakings."

We were off for a holiday, and he seemed to shrink from very profound discussion as being too near to work. Yet, for a time he and Fiske did get into a run of talk which I, tho I believe I understand all their writings, did not understand at all.

"I asked him whether he expected, before finishing his *Philosophy*, to treat specifically the compensations which the present view of the universe offers in place of some cherished beliefs which have disappeared with the old view; and I stated the impression that such a treatment is naturally the final word of any system of philosophy, as it must be expected (rightly or wrongly) to supplant previous systems. He answered that the details of his system were all that he could hope to present, and more; but that naturally some of the topics I referred to would be incidentally treated in the Ethics.

"There was not the slightest appearance of assumption in his treatment of us two disciples, even tho we were some twenty years his juniors—no such expression as 'when you get to be as old as I am,' or 'that view is natural to your years,' etc., etc. In all these particulars he is as thoro a gentleman as I ever met, perhaps the most thoro.

"There is very little 'warmth' in his manner, yet no one would think of calling it cold—he is very gentle, kindly, and sincere.

"We rambled some dozen miles during the day, and he, of course, directed all our movements, but very quietly and without confusion. His calm, steady way of getting irresistibly ahead, is very remarkable."

This gentleness of manner and disposition was in marked contrast to the Olympian wrath he showed over an instance of false service, which, he said, was too characteristic of English

life to let pass unnoticed. It was on the "other day in the country," when we were driving at Windsor, and stopped at an inn for refreshment. On our re-entering the carriage, a vagabond unnecessarily closed the door after us, and claimed something for doing it. Spencer told our man to drive on, and upon the man's hesitating, Spencer broke out. I was very much impressed by the power of his wrath, tho I have wondered if I would have been so much impressed by equal power in a man whom I held in less respect.

During that "other day in the country," at Windsor, he made an interesting response to my telling him about my asking one of our leading American physiologists at what age he thought a man's powers usually culminate. He said, "Forty." He was then himself thirty-nine. When he was forty-nine, I asked him the same question, and he answered, "Fifty." Spencer answered that my friend was probably right regarding everything but the brain, because we had inherited everything but the highly-developed brain from ancestors much shorter-lived than ourselves. But, as we have the brain from our longer-lived ancestors, thought Spencer, it does not culminate before sixty. Spencer was then fifty-nine. And now I can't tell for the life of me whether I remember, or whether the symmetry of the idea has merely made me fancy, that Fiske told me later that he had asked Spencer the same question when he was sixty-nine, and that Spencer answered, "Seventy."

"With all Spencer's ingenuousness, he accepted the fact of his own greatness as he accepts sunshine, and his consciousness of the one seems no more obtrusive or persistent than of the others. He talked a little of himself, as he might have talked of somebody else. Touching on the limits imposed upon his work by the ratio of its magnitude to that of the life and strength of one man, he said that he looked with surprise at his having undertaken it, poor as he was in health and resources, and having carried it along while it was exhausting his little means year by year. But now, he said, he was prospering and increasing in vigor. Yet his statement of all this was so perfectly colorless that it awakened hardly any more feeling than a glass of water awakens in the eye or tongue. Herbert

Spencer seemed just the same to him that anybody else is—no more and no less.

"He did not like a decimal system, preferring 12 as a radix because it has more factors than 8 or 10. He said that in his 'early engineering days' (an expression that he used more than once), he often found help in dividing long numbers by seeing if 12 would 'go.' He was very full of illustrations where men have hung onto the 'dozen,' 'in spite of their fingers and toes,' as he expressed it, and cited 12 inches in the foot, 12÷4 feet in the yard, 12 months in the year, 12x2 hours in the day. Yet he would prefer a decimal monetary system to the present confused English one, but a duodecimal system to either."

The late Professor Newton of Yale preferred 11 as promoting exactness and hence morality. He thought that a radix with many factors, or especially one divisible by two all the way to unity, would get people in the way of saying "about a half, about a third, about a quarter," instead of saying exactly what they mean. In Spencer's will, he made some provision for promoting his opposition to 10.

"As we were in the country, I naturally asked him whether he preferred living in country or city. He answered, the country, if he could take his friends and his club with him; but he prefaced this conclusion by saying that it was a complicated question. He did not often put things briefly, sententiously, antithetically, but ran rather to exposition—as he sometimes did in his books, farther than the reader enjoys. As to his club—the Athenæum—he expressed great attachment for it, said he was in the habit of lunching there, and deferred an appointment we proposed, because it would interfere with a meeting of the board of management, saying that his absence from two consecutive meetings was 'a thing never heard of.'"

"As we walked, his attention was constantly alert, tho not enough to seriously disturb the continuity of conversation. Several times he turned to examine plants, and showed me a beautiful ivy-like creeper which I had never seen. He greatly enjoyed, in his quiet way, a space covered with the wild hya-

cinth, and helped pick some to send to America, where there was some skepticism regarding its existence. Once he stepped briskly from the path, exclaiming, 'There's the eucalyptus!' It was a slender, erect shoot, tied against a stick, in private grounds. Spencer explained that at the age of that shoot the plant was in a sort of embryonic stage, differing more than plants in general from its mature character, and that even its arrangement of leaves would change in a year or two if it should live, which it would not be apt to do in the English climate. His explanation was quite detailed and technical, of this and hosts of other matters he brought to our attention. He gave us a very full and learned explanation of the habits of dogs in seeking and leaving traces, explaining them as concomitants of sexual selection. He was not dead to the humorous aspects of the case, tho not disposed to develop them in connection with the dirty ones. He spoke of the dog's habit of rolling over its prey as intended to catch its scent; and of the Newfoundland's rolling over the stick recovered from the water, as a dramatic rendering of the same thing.

"He showed frequent ingenuity in accounting for things—for instance, that some dry branches in a defective hedge were covered with pitch, not for reasons of arboriculture, but to prevent the boys getting thru.

"He never tired of laughing at the rabbits, of which 'whole lots,' as he expressed it, were scampering before us. Two or three times he stopped to listen to the birds, with the greatest enjoyment, and" (perhaps I may be excused for quoting) "it was a most welcome and suggestive coincidence that he first indicated to me the song of the nightingale."

This wide, minute, and eager knowledge of Nature was in marked contrast to his saying, on that "other day in the country," at Windsor when I was questioning him regarding some events there, "I'm proud to say I don't know. The gossip of courts and camps, usually called History, never had much interest for me," and then he repeated what he had already told us at Richmond about the peculiar character of his memory. Later, in London, he repeated the same thing when I expressed curiosity regarding the number of the "Smithfield Martyrs."

His memory did not drop facts in Nature, tho, as it did facts in history.

" Two or three times he spoke of England's rich heritage of parks being a result of aristocratic institutions, the parks nearly all being old domains of the crown or great nobles. Yet he hates monarchy, or at least some of people's habits regarding it, so thoroly that he does not go to public dinners because he will not join in drinking the health of the sovereign.

" I asked him if he did not find dictating a disadvantage in composition, because one cannot readily change and improve as one goes along. He answered: ' But you should see my proofs! I tear three of them all to pieces, and even my amanuensis writes on alternate lines, so that I can readily insert changes.' "

This is in marked contrast to the statement in the paper which gave him blue eyes, that he seldom altered a line. It is not impossible that that writer got himself confused with Spencer's propagandist Fiske, of whom the statement would be true.

" Spencer liked to tell stories, and knew all the standard ones and many esoteric ones. He was the first to tell me the one, now pretty well known, of the Englishman bragging before a Frenchman and an American, of his resemblance to the Duke of Wellington; and the Frenchman quieting the braggart by saying that people often bowed to the Frenchman himself for the Emperor; whereupon the American administered to both the statement: " Why, I met a man the other day who said to me, ' My God! Is this you? ' "

" He was fond of talking about his friends, and I was surprised to learn that he had been fond of visiting at the house of a man so utterly dissimilar from himself as Carlyle, tho in time he got tired of the old man's diatribes. I think, from many things he said, that the real attraction was the quick wit of Mrs. Carlyle, of which he gave us some examples that it might pain the subjects, or their survivors, to print even now. He told us what I believe I have read elsewhere, that she never spoke when her husband was in the room."

I find in the diary later, after one of our talks in London,

this passage which I quote literally: "S. is certainly one of the kindest and most translucent souls I ever met. Perhaps the same amount of kindliness in a smaller man would impress me less. Of course, as shown from him to me, it impresses me very deeply. I don't say that he is a warm-hearted man exactly. His life has perhaps been too purely intellectual, and too little blessed with the exercise of the strong affections, to make him that. Tho perhaps if he were more of that, his thinking and living would have been so involved with other things than thought, that the world would have had to wait longer for the *Synthetic philosophy*."

I have been asked to supplement these notes by an estimate of Spencer's place in philosophy.

At the outset it is worth while to note that his position was not among the defective distorted ascetics, like Diogenes and the others of unfragrant memory, but among the complete men —Socrates, Plato, Aristotle, and their kind, each of whom lived in his world, gave it of his best, and got its best in return; and that these complete men were the greatest.

Comparatively few of the millions of men speaking all civilized lauguages, who frequently use the world evolution, or its equivalent, in relation to ideas, institutions, laws, and social usages; fewer still of the many who in the same connections use, and the many more who abuse, the word "differentiate" and its progeny; but a larger proportion of those who speak of the "line of least resistance," know that those words, for those purposes, were not a part of human speech fifty years ago, and that the man who effected the immense development of thought which made those words, for those purposes, part of human speech, has just passed away.

This lack of appreciation of the colossal work of Spencer is not hard to account for. His work is so different from what passed as philosophy before his day, that the traditional habits of philosophic study are alien to it—so alien that most of the minds attracted to what still passes for the study of philosophy, show, in that very circumstance, that they are not formed to appreciate Spencer. An obituary notice from a very prominent

representative of them took no note of the fact that he remade the habits of speech and (of course) of thought, all over the civilized world; and because Spencer's works were no longer received with the general attention that hails a novelty, the writer apparently inferred that their influence was diminishing. In face of the fact that the world is now used to them, he was at the pains to say that certain prominent parts of them "sounded more original in the '50s and '60s than they do now." This sort of talk has been heard in clubs and even classrooms since Spencer's death. The recognition of his influence is not marked, simply because the influence is, even now, a matter of course. But every child that goes to school, and every adult that sits at the feet of wisdom, or even of pulpit authority, is now learning Spencer, whether he knows it or not, and whether the teacher knows that he is teaching Spencer, or not.

We are so close to this, and it is so colossal, that few of us are so placed as to recognize its proportions; but in the bird's-eye view of the future, students will see its true outlines, and spread Spencer's name among those who never read a line of him, as the names of Aristotle and Newton are spread now among those who know little more than the names.

Teachers who know Spencer at all are, of course, most apt to be familiar with his little book on *Education,* which tho a very original and powerful work, has little organic connection with the mighty structure by which the philosopher revolutionized human thought. The great revolution was based, primarily, on physical science; and Spencer's own education was primarily in that sphere, altho later he revolutionized psychology and ethics. He had but one life to live, and the marvel is that his attention could have covered what it did: no wonder that it did not embrace history and the humanities in general, with the same thoroness that it gave to what is generally included under "Science." The effect of this undoubtedly made his book on education one-sided. Yet many of its precepts were all-sided, and strangely original. Space will permit the specification of only that new and most fruitful suggestion that punishment should always be as nearly as possible a natural

consequence of the reprehensible act. Nothing can be more illuminating, or a greater departure from earlier ideas. But it is to be hoped that most readers of this have understood and acted upon the precept; and instead of expounding it, I will try to convey an impression of what made Spencer's main work —his *Synthetic philosophy*—a landmark of the ages. In the space, I cannot do it better than in expressions most of which have been ephemerally printed elsewhere.

The first dreams and guesses that we call philosophic were in regard to the constitution of all things, as distinct from particular things. Dreams and guesses grouping, as one, the constitution of things and thoughts, came later, and were still more vague. The first established philosophic law—the first philosophic idea which was anything more than a dream or guess—was Newton's law of Universal Attraction; and even it was only half-philosophic, because it related only to things. The next law, but similarly limited, was that of the Conservation of Energy.

Meanwhile, however, two pregnant scientific (not philosophic) laws had been discovered, which, with the two semi-philosophic laws, pointed to Spencer the way to the first completely philosophic law—the first law ever discovered which included both things and thoughts. The two scientific laws referred to were Laplace's law of stellar and planetary evolution, and Darwin's law of organic evolution. Spencer expanded these two into the semi-philosophic law of the evolution of all *things*. Then he demonstrated the identity of the laws of things with the laws of thoughts—that changes in thoughts follow the same courses as changes in things; and he included both classes of changes under the laws of motion, as discovered by Newton. Thus he reached the law of the evolution of all thoughts, and showed that the laws of thoughts and things were but one. This one was the law of Universal Evolution, the first really philosophic law—not a dream or a guess, but a demonstrated law.

That this could be done by one man, in one lifetime, so thoroly as to answer all questions, meet all criticisms, and prevent all cavil, it would be wild to suppose; but the law is suf-

ficiently demonstrated to be the test now generally applied by experts, all the way from cosmogony to music; and even, as already said, to be largely a matter of course in the thinking and talking of the average man.

No wonder that Darwin said, "We all bow the knee to Spencer," and that many others, not unworthy to be named near Darwin, hold Spencer to have been what the facts, briefly summarized above, demonstrate him—the first philosopher of all time. His predecessors only dreamed of philosophy; he was the first to attain it. He found philosophy an ideal; he made it a fact.

## II

## EDUCATIONAL AFFAIRS IN THE PHILIPPINES

The past year has been a most critical period for Philippine education. The ravages of Asiatic cholera, the extreme poverty of the people,—due to a long period of warfare followed by the loss of the carabao and the destruction of crops by drought and locusts,—the inadequacy of public funds to support properly the work already begun, and the frequent changes in the personnel of the administration of educational affairs,—all these things have conspired to retard progress and demoralize the work.

Furthermore, the novelty of the American school began to pass away with the advent of 1903, and the Filipino mind became disabused of the idea that the English language was easily and quickly acquired. Also, during the periods of military and semi-military administration of local affairs, many Filipinos were imbued with the idea that their loyalty to the American cause might be called into question unless their children attended the public schools. In many cases this sentiment was deliberately created or encouraged by the local authorities, but, in the main, it was their natural conclusion formed from experience with the institutions of the Spanish régime.

With the widespread institution of civil government and with a better understanding of the nature and privileges of American rule, the people generally felt a greater freedom to follow their own inclinations. This resulted in the loss of all that portion of the school attendance which was not entirely voluntary and actuated by a genuine desire for education for its own sake. This falling off in attendance during the latter months of 1902 was viewed with some discouragement, since it seemed that the Filipinos' desire for education was on the wane.

However, it was soon realized that an artificial state of affairs had existed previously, and that the real groundwork and hope for the stability of the movement remained in the large number of pupils who continued in the schools in spite of many difficulties. This was more clearly demonstrated as gradual gains in the best class of students began to be made and the percentage of regular attendance increased thruout the entire field.

The condition in Manila may be taken as a typical example. Its school year began with June and the enrollment for that month was only 3046, with an average daily attendance of 2341. Subsequently, the city schools have had a rapid and healthy growth. The August enrollment was 4273, with an average daily attendance of 3950. But while the gain in attendance in the Manila schools is typical in that respect, the attendance per capita in Manila is by no means representative. For instance, the Division of Hocus Sur and Abra, with less population than Manila, has a school enrollment of 16,143 at the present time.

This comparatively small attendance in the city is largely due to the fact that Manila has long been the chief seat of learning for the Archipelago and has numerous private, sectarian, and semi-political schools that enjoy considerable celebrity among the Filipinos, who have for years been accustomed to consider a course in one of these schools the *sine qua non* of aristocratic education.

But the chief reason for the small school attendance in Manila is the lack of proper buildings and equipment. Principals report that they are forced to turn away hundreds of applicants for admission because there is no room for them. The present schoolhouses are all filled to their utmost capacity and the teachers are overburdened with work. The same conditions obtain thruout the islands. The provincial schools are overcrowded and the teaching force inadequate.

Hitherto, Philippine school statistics have been more or less based on estimates. This year, however, aided by the census operations, the Department of Education can furnish the actual figures relating to its work. At the present time,

there are 38 provincial high schools,—most of which have been organized within the last year,—and 2000 primary schools. There are now 723 American teachers,—200 less than were engaged in the work last year,—and about 3000 native teachers. The total school enrollment is about 200,000, which is considerably less than the estimated attendance of 1902, tho it is believed that more pupils are actually receiving regular instruction in the schools than ever before.

How far short this condition falls of furnishing the desired four years of primary education to the children of the Philippines may be judged from the fact that the new census shows a school-age population of over one million and a half in the Christian provinces alone. The General Superintendent of Education estimates that there should be 10,000 Filipino teachers and at least 850 supervising American teachers engaged in the primary work alone. As this would only permit of 400,000 in the schools at any one time, based on an average of 40 pupils to each teacher, it seems a conservative statement of the actual needs.

However, there is no such supply of native teachers to be had, nor will a sufficient number of properly qualified Filipino instructors be supplied for several years yet, unless there is a rapid extension of the normal-school system. The Manila Normal School is doing excellent work with an enrollment of 400, but its facilities are inadequate to meet the demands upon it. There are also good normal schools in Lingaryen and Iloilo, but nowhere are there sufficient accommodations to provide for the instruction of all applicants. These conditions are known and deplored by the Department of Education, but the municipalities are too poor to furnish funds for the support of additional schools and the Insular Government feels that it is doing all it can at present.

The Filipino teacher has justified the confidence placed in him from the first, and chiefly upon him will devolve the task of educating the masses of his people. Those who have been trained in the use of American methods are doing excellent work and manifest a genuine professional interest in their calling.

One hundred bright Filipino students have recently been selected, chiefly from the public schools, and sent to the United States at the public expense, to receive normal training there. These students will first be placed in the grammar schools of Southern California, where they will remain until they become accustomed to the country and are prepared to enter the Normal School. Then they will be distributed among the various States where the climate is not too severe and the normal-school courses are best suited to their needs. Aside from their value as educators, it is confidently expected that these young men will be a great influence for good government when they return home to their native towns thruout the Archipelago.[1]

Altho the native teacher is rendering excellent service, the American teacher is still the mainstay of the educational work. He sets the pace for the Filipino teacher and creates *esprit de corps* in the local teaching force. While there are necessarily exceptions, the work of the American teacher in the Philippines is beyond praise. He goes into towns far removed from the influences of the outside world and becomes a power for good in uplifting the people both by example and by precept. He often becomes the chief adviser of the local presidente and the dispenser of justice in matters of civil dispute. In many towns he is the sole representative of the American government, and his responsibilities are heavy. On the whole, he has met the requirements of the situation here and proved an invaluable aid in the establishment of law and order.

In some cases, a single American teacher has towns aggregating 30,000 people, scattered in a score or more of barrios, under his charge. The islands of Lyte and Samar have only one American teacher to each 27,000 inhabitants; Bohol, one teacher for each 24,000, and Cebu one teacher for each 21,000 inhabitants. The General Superintendent

[1] Altho it was the original intention that these students should be educated for teachers, since writing the above it is learned that their instruction will not be confined to the normal schools in the United States, and that they will enter a number of different branches of the Civil Service here upon their return. The school department will, of course, get its share in the apportionment.

recommends that there should be at least one American teacher for each 7000 inhabitants. This is certainly a very conservative estimate, even should the American teacher be used entirely in the work of supervision and normal instruction.

During the past year, there have been 14 deaths among the American teachers. Of these, 4 died from Asiatic cholera, 4 from smallpox, 2 were murdered by *ladrones,* and there was 1 suicide. In addition, 38 were forced to leave their work on account of ill health of self or family, 93 resigned at the expiration of the two-years' contract service, 21 were appointed to civil positions, and 50 resigned to go into business.

From the foregoing, it will be observed that there is considerable difficulty in maintaining an adequate and efficient American teaching force in these islands, for not only are the climatic and social conditions hindrances to long service, but there are constant losses thru the allurements of business and better paid civil positions.

The last year has seen a change in the status and method of appointment of the American teachers. They have been incorporated into the Insular Civil Service, and applicants in the United States for appointment to this service must take a civil-service examination there and be placed on the eligible list. This list is forwarded to the General Superintendent of Education at Manila and he selects and appoints therefrom, subject to the usual executive approval.

For some time, American educational work in the Philippines met with considerable opposition from the local Catholic clergy. This opposition was largely due to an incorrect understanding of the aims of the United States Government in promulgating general education among the Filipinos. However, since a knowledge of its entirely secular character has become prevalent, this opposition has almost disappeared and many of the parochial schools, which were opened with the avowed intention of preventing attendance at the Government schools, have been closed. Those remaining have a comparatively small attendance and are no longer a menace to public secular education. In fact, many of the provincial

teachers report that the local padres are among the stanchest supporters of the schools.

A large part of the credit for this happy condition of affairs should go to General James F. Smith, the present Secretary of Education, who is himself a Catholic. By his diplomatic and tactful handling of this subject, he has rendered the Filipino people a great service and one that they will better appreciate as the benefits of public education become more apparent.

In spite of many great difficulties during the past year, the outlook for a permanent and efficient public-school system was never brighter. Dr. David P. Barrows, who has just succeeded Dr. Bryan as General Superintendent of Education, has taken hold of the work with his characteristic enthusiasm, and having had valuable experience as the first Manila City Superintendent of Schools under the Civil Government, and as Chief of the Bureau of Non-Christian Tribes,—a position that took him into every part of the Archipelago and afforded him an opportunity for personal knowledge of the conditions such as is possessed by no other American, except Commissioner Worcester,—he is thoroly qualified to administer his important office most intelligently and efficiently.

Dr. Barrows speaks Spanish fluently and, for the last three years, has made a close study of the history and ethnology of the Philippine Archipelago. The publication of his *History of the Philippines*, now in press, is awaited with much interest, as it will undoubtedly be carefully and attractively written. When City Superintendent of Schools in Manila, he shared with Dr. Atkinson the belief in the wisdom of making English the basis of all public instruction here from the beginning. His experience has evidently strengthened this conviction, and I quote the following from his report just made to the Philippine Commission:

> The question has frequently been raised whether these Filipino languages are sufficiently related so as to fuse into one common tongue, and the Bureau of Education has received its most vigorous criticism in the United States because of its alleged attempt to supplant and destroy what might, in the opinion of absentee critics, become a national and characteristic speech. Such criticisms could only proceed from a profound ignorance of

the nature of these languages and of the people who speak them. All of these dialects belong to one common Malayan stock. Their grammatical structure is the same. The sentence in each one of them is built up in the same way. The striking use of affixes and suffixes, which gives the speech its character, is common to them all. There are, moreover, words and expressions identical to them all. A hundred common words could easily be selected which would scarcely vary from one language to another, but the fact remains that, while similar in grammatical structure, these languages are very different in vocabulary, so different that members of any two tribes brought together are unable to converse or at first even make themselves understood for the simplest steps of intercourse. The similarity in structure makes it very easy for a Filipino of one tribe to learn the language of another; nevertheless, these languages have preserved their distinctions for more than three hundred years of European rule and in the face of a common religion and in spite of considerable migration and mixture between the different tribes. In no case is there any indication that these languages were fusing. The Filipino adheres to his native dialect in its purity, and ordinarily uses broken Spanish when he converses with a Filipino of another tribe. These languages are not destined to disappear or to fuse, nor are they destined to have literary development. One has but to examine the literature that has appeared in the last fifty years in each of these tongues to see how unlikely of literary development is any one of them. For common intercourse, as well as for education, the Filipino demands a foreign speech. To confine him to his native dialect would be simply to perpetuate that isolation which he has so long suffered and against which his insurrection was a protest. Opponents of English education find no sympathizer among the Filipino people. English is the *lingua franca* of the Far East. It is spoken in all the ports from Hakodate to Australia. It is the common language of business intercourse between the different nations from America westward to the Levant. It is without rival the most useful language which a man can know. It will be more used within the next ten years, and to the Filipino the possession of English is the gateway into that busy and fervid life of commerce, of modern science, of diplomacy and politics in which he desires to shine.

Knowledge of English is more than this—it is a possession as valuable to the humble peasant for his social protection as it is to the man of wealth for his social distinction. If we can give the Filipino husbandman a knowledge of the English language and even the most elemental acquaintance with English writings, we will free him from that degrading dependence upon the man of influence of his own race, which made possible, not merely insurrection, but that fairly unparalleled epidemic of crime which we have seen in these islands during the past few years. From my own personal observation and conversation with men of wide experience in the events of recent years, I believe it is safe to say that in the majority of murders committed during the last five years, the murderers, ignorant and debased tools, acted from no other motive than that they were told by those to whom they were economically bound and dependent that they must go and kill such and such men. There is no remedy for this state of society or for *caciquisimo* generally except the enlightenment and moral training of this great ignorant mass of the Filipino people.

From the above, it will be seen that the attitude of Dr. Barrows towards his work is that education in the Philippines means civilization in its broadest sense; enlightenment and freedom from the bondage of savagery; an appreciation of law and order and the ability to secure them; and finally, but subordinately, all the benefits of modern culture. American education in the Philippines can no longer be called an experiment; it is an acknowledged power for good, and the chief means for the uplifting of these peoples. It has been an invaluable aid in establishing law and order from the beginning, and it is the chief hope for the stability of peace and good government and for the future growth and prosperity of the Filipinos. That it has lacked ample financial support during the last two years is to be deplored. True that the Insular Government has been very poor, but if the United States Government proposes to make a success in its Far Eastern Experiment, why should it hesitate to lend financial aid in this most important phase of the work?

It is generally acknowledged that with peace and a market, the agricultural resources of the Philippines will bring great wealth. Why, then, should its government hesitate to mortgage the future in lending aid to the people in the time of their need? It is manifestly as much a public duty to provide ample means for the purposes of primary education in the Philippines as it was to maintain law and order here at our own expense with the Army during the insurrection. Furthermore, in this case, we might reasonably hope for the return of our investment. Let the members of Congress, who profess so great an interest in the "Filipino Nation," direct their endeavors to providing means for the support of its public-school system. Then will they indeed confer a lasting benefit upon these peoples and assist materially in hastening the day of their political capacity and emancipation.

FREDERICK W. NASH

MANILA, P. I.

## III

## RUDOLPH STAMMLER

How to be a good schoolmaster has become a science, but how to be a master of men will remain an art. And while no other art is of deeper concern to education, we know for certain about its technique but one principle: Strive to masterhood consciously, and one's failure is assured. Thus it is pathetic and amusing at the same time to see gentlemen of those liberal professions whose trade is fame, as, for example, the minor poets, steadily at work anathematizing an unappreciative mankind.[1]

Rudolph Stammler, the present Rector of the University of Halle-Wittenberg, great and famous as he may be thruout the European continent as jurist, social philosopher, educator, and orator, is above all remembered by all who have come in contact with him as a master of souls, as a personality. He has had no cause to complain of unappreciative fellow men. Recognition as a leader has followed him wherever he has appeared, and the records of his success as a university teacher sound like a fairy tale. Stammler was born in 1856 as a son of the learned Judge Carl Stammler, in Ansfeld (Hessen). Twenty-six years later we see him elected dean of the famous juridical faculty of the Halle-Wittenberg University! He was at one time docent in Leipzig, afterward professor of Roman law in Magdeburg, and then in Giessen, whence he was called to the University of Halle-Wittenberg, where he is at present Rector.

Stammler's rapid promotion at such an extreme youth breaks, so far as I know, all German university records. The German professor's pride is scholarship; his promotion and success usually depend, not upon his ability as a teacher, but upon his learning, sometimes even rather upon the quantity than upon

[1] An interesting collection of such quotations is to be found in Schopenhauer's *Ueber Urtheil, Kritik, Beifall, and Ruhm.*

RUDOLF STAMMLER

*Professor of Civil Law in the University of Halle*

the quality of his works. It is therefore interesting to know how many works Stammler had written when he was chosen dean. None! Of course, he wrote a dissertation and probably the officially required *Habilitationsschrift,* but one has never heard of them. They were of no consequence. The young professor was not writing any books; he could not trifle or devote himself to details, not having solved the cardinal question, *What is law and what is its criterion?* And to this problem he has devoted his life.

But let us turn for a moment to Stammler as an educational reformer.

He was a professor of jurisprudence, and Roman law was his specialty. Roman law, as is well known, has been the cornerstone of legal instruction in all the universities of the European continent. With the same radicalism which is so characteristic to the working of Stammler's mind, he could take nothing for granted without thoro examination, and he came to the conclusion that the existing system of instruction did not answer its purpose. He demanded the center place in the university course for the civil law of the land, and in the Roman law he saw, instead of the only possible training school for the legal mind, nothing but an important piece of history. This point of view is purely Anglo-Saxon, and was regarded as heresy in German university circles. Stammler further discarded the general European system of purely theoretical instruction in law and introduced practical exercises and study of cases for beginners parallel with theoretical courses.

In brief, one may state the results of Stammler's reforms in teaching the law in Halle to have been so successful that the Prussian Government, thru its ordinance of January 18, 1897, introduced them in all Prussian universities. In the footsteps of Prussia followed the other German states, and professors of law in other countries are constantly visiting Stammler, watching how his system works with beginners. Stammler's introduction of practical work is already followed either wholly or partially by the universities of Russia, Switzerland, Austria, Hungary, and France.

All these educational reforms are, after all, but a by-product of Stammler's genius. They are very characteristic, and throw light on the fundamental elements of his personality. Stammler cannot play with things. Once confronted with a problem he is bound to exhaust it.

There are plenty of people who take life so very earnestly. But they often extend their earnestness to every department of life. Not so Stammler; he is one of the sunniest natures imaginable, full of delightful humor, a child among children, and with a remarkable talent for friendship and goodfellowship. But there are things which Stammler takes in a way that the word "earnestness" fails to express. Objective truth, "sub specie æternitatis," is his religion.

As a jurist, he was naturally primarily interested in searching for a criterion of law, for the meaning of law in the relation of law to right. With hope he studied all the famous works on philosophy of law, only to be disappointed. Most disappointing of all systems was to him the historical school of jurisprudence, which some twenty years ago was dominant in Germany. This theory, as is well known, is a product of the German Romantic Epoch of the beginning of the nineteenth century. It rendered valuable service in criticising some rather fantastic natural rights—doctrines of the eighteenth century; it was extremely fruitful in encouraging investigations of the history of law and in collecting material of local customary law, but, nevertheless, it was so full of nationalistic mysticism that Stammler could see in it nothing but a flat failure.

In its last analysis, the German historical school of jurisprudence taught that a nation is a physical phenomenon, just like an individual. True, this "Volksseele" cannot be scientifically investigated or defined with precision, but its reality manifests itself in the empirical world especially in the fact that individual members of the same nation have common convictions on certain questions. And when this common conviction (*Gemeinsame Ueberzeugung*) relates to matters of law, this conviction is Right. The legislator creates no law, he only revises, crystallizes, and edits this common conviction of

his people in matters of law. It is the "Volksgeist" that produces the positive law.

This doctrine is not to be confused with the sound notion of the existence of national differences, which no sane man ever denies, but what this doctrine meant is rather that a mystical and romantic interpretation of a nation's law is the supreme criterion of law. Strictly speaking, the historical school of jurisprudence recognizes no systematic criterion of law, since the law is a product of the "Volksgeist," and there is no criterion for that "Volksgeist."

Equally dissatisfied was Stammler with the other systems of philosophy of law, and thus, not having found what he wanted in jurisprudence, he turned to a systematic study of philosophy.

Here again we meet with a characteristic feature of Rudolf Stammler, a point in which he fortunately differs from some of the best social scholars here and abroad. No man of any scope who deals with any branch of social science can, of course, neglect some study of philosophy. But once engaged in a different branch of knowledge, one seldom has energy enough to devote some of one's time to a systematic study of philosophy. Promiscuous philosophical reading is deemed sufficient for the purpose, and then pathetic things happen. Probably the greatest and broadest juridical mind of the nineteenth century—Rudolph von Jehering—did not accomplish what he might have accomplished had he ever had but a thoro philosophical training.[2]

Stammler decided to begin from the beginning, and when full professor of law he went regularly to lectures and seminars

[2] Jehering acknowledges it himself in the preface to his great work *Der Zweck im Recht* (Vol. I, Leipzig, 1893, page ix). "Wenn ich es je bedauert habe, dass meine Entwickelungszeit in eine Periode gefallen ist, wo die Philosophie in Misscredit gekommen war, so ist es bei dem gegenwartigen werk. Was damals unter Ungunst der herrschenden Stimmung von dem jungen Manne versaumt worden ist, hat von dem gereiften nicht mehr nachgeholt werden können. Wenn ich gleichwohl vor der Aufgabe, ein philosophisches Thema zu behandlen, nicht zurückgeschreckt bin, so ist es geschehen in der Hoffnung, dass die Kenntniss, des positiv juristischen Materials, die ich vor dem Philosophen von Fach voraus habe, ihm wenigstens stofflich manches zuführen wird, das ihm für seine Zwecke förderlich sein kann."

of the instructors and professors of philosophy in Marburg. Logic and epistemology were naturally those branches of philosophy which attracted him the most, and Kant's epistemological method gave him a new point of view. He saw that Kant and his epigons did not touch epistemologically jurisprudence and social science at all, but in the Kantian critical method he saw possibilities for scientific jurisprudence which Kant failed to see.

Stammler began to work on a book on the fundamental principles of jurisprudence, a work to the writing of which he devoted sixteen years. Parts of this fundamental work were published by him earlier in form of monographs.[3]

While working on this book Stammler came to the conclusion that it is impossible to disassociate jurisprudence from social science in the broadest sense of the word, and he began to study political economy and sociology. Working on different economic and sociological systems, he was singularly impressed by the system of Karl Marx, and, above all, by his materialistic interpretation of history.

Stammler, a Kantian idealist, was, in principle, certainly more opposed to the social-democratic materialistic doctrines than practical politicians and economists without any philosophical principles could possibly be. But he could not help feeling that in their consistent materialism was more sound theory than in the mushy eclectic so-called idealism of the historical school of jurisprudence and political economy.

Stammler's attitude towards the Marxian doctrines was very much the same as Friedrich Albert Lange's attitude towards metaphysical materialism. He respected them. This respectful attitude of Stammler towards Marxism had, as we shall see, results not of merely local and theoretical, but of great practical significance. He defeated Marxism on its own grounds, and the Marxists were obliged to acknowledge their defeat.

In the middle of the nineties Marxism was at the height of its power. Germany's powerful Social Democratic party, with

[3] Rudolf Stammler, *Über die Methode der Geschichtlichen Rechtstheorie*, Halle, a/s, 1888. *Idem*, *Die Theorie des Anarchismus*, Berlin, 1894.

over fifty representatives in the Reichstag, solidly confessed the Marxian doctrines. In France, Italy, Belgium, and Holland Marxism was almost as strong as in Germany and the doctrines were gaining grounds in the other countries of the European continent.

As is well known, Marx called his socialistic system "scientific socialism" and opposed bitterly the so-called "Utopian socialism." Under Utopian socialism he understood any socialistic system that was not his own.

Marx's social philosophy was the product of Hegel's dialectic system, in which he was bred and the passionate political class-struggle, as he saw it in Paris on the eve of the revolution of '48. Marx saw one class of society struggling against the other; he saw the lower classes gain in power, and he hoped for their victory. Abolition of capitalism, socialism, or communism were the watchwords of the Paris proletarians. Marx was profoundly in sympathy with them in everything but this: the absence of a definite philosophical doctrine. The French Socialists troubled themselves little about the laws of the development of mankind; about class-differences and class-struggles. Their watchword was to bring the world without distinction of classes to their idea of social justice, and when this was accomplished, they fancied the world could be reorganized overnight.

To separate the present from the past was an impossibility to the Hegelian mind of Marx. For him it was essential that a law of deveolopment, that *the same* law of development underlie the present as well as the past. But what is the law of development of social life? Is it the Hegelian development of the "Absolute Geist"? With Feuerbach Marx gave up the distinction between spirit and matter. Spirit is a creation of men. Men, however, are not the species of men, not the "Nature of men" as Feuerbach supposed, but men are the society of men; they are a product of society. Marx reasons that, in order to live and to be able to produce goods, men have formed themselves into social groups. *The process of production is therefore the primary process of humanity.* The law and the division of classes correspond to the various

stages of production. The class beneath naturally struggles against the class above it, but it can win only when the development of production allows it. So the bourgeoisie triumphed over feudalism, so must the proletariat and socialism triumph over capitalism. Therefore not ideals, not love and justice, but the struggle of classes and the development of capitalism must lead to the abolition of capitalism. It is therefore, according to Marx, not the Utopias and social panaceas that can heal society, but that iron necessity of nature which is the law of history.

Marx formulates his own philosophy in these words: "In the social production of their every-day existence men enter into definite relations that are at once necessary and independent of their own volition—relations of production that correspond to a definite stage of their material powers of production. The totality of these relations of production constitutes the economic structure of society—the real basis on which is erected the legal and political edifice and to which there correspond definite forms of social consciousness. The method of production in material existence conditions social, political, and mental evolution in general. With the alteration in the economic basis the whole immense superstructure is more or less slowly transformed. In considering such transformations we must always distinguish between the material transformation, of which natural science teaches us, and the legal, political, æsthetic, or philosophical—in short ideological forms, in which men become conscious of this conflict and fight it out." [4]

So we see that Marx's fundamental unity, on which all changes in history depend, is the form of production. Of course this theory of Marx and his followers became an object of constant criticism and attack on the part of the German historical-ethical schools of political economy and jurisprudence, but the academic theories were too vague, and the fascination of the Marxian radicalism rather gained than suffered from such criticism.

[4] We are using Seligman's translation in his *Economic interpretation of history*, p. 43–44.

II

It was in the fall of 1895 when Stammler's first great work left the press. It was called *Wirtschaft und Recht nach der Materialistischen geschichtsauffassung. Eine social philosophische Untersuchung.*

As is indicated by the title the book deals to a certain extent with the Marxian social philosophy, but the real problem dealt with is the scope and method of social science.

From the very start Stammler announces that his investigation is not psychological, but epistemological and logical.

First of all Stammler tries to determine the boundaries of the science with which he is dealing. Social science is the science of society, but then comes the question: *What is society?* What are the characteristics which constitute society and without which an idea of society is impossible? A charitable society is a society, a business-corporation is a society, a social club is a society, a football team is a society, a commonwealth is a society, etc., etc. What have all these phenomena in common that makes us call them a society? All of them contain more than one person. But a group of persons does not necessarily form a society. We could imagine a plurality of isolated individuals, to which we cannot possibly apply the term society. For instance the Emperor of China, the rector of a New York church, and the president of a South African railroad are a plurality of persons, but they are isolated individuals, to whom the word society cannot apply, while, on the other hand, a number of individuals that do not know each other and live in five different continents may constitute an international scientific society.

Analyzing logically, at length and in detail, the manifold characteristics of the phenomena which our language designates as society, Stammler shows that there is one characteristic condition which is common to all our ideas of society and without which *no idea* of society is possible.

This characteristic is the *outward norm*, the outward regulation. It is immaterial if this outward norm be a mere

conventional rule or of legal and statutory nature. The fact remains that the members of any society you please have to recognize some specific rules, be they rules of conduct or of fashion, or laws written on the statute book of our State. A further analysis of social life shows that wherever we may find it, be it in the remotest part of our history or in the obscurest corner of our geography, society exists always and only within customs and law, that is under outward norms.

These norms, or, as Stammler calls them, "Aeussere Regehungen," constitute, therefore, the form of social life. But what is the *content*, the *matter*, the *stuff* of social life?

To satisfy their needs human beings work; to resist or to use successfully the natural forces surrounding them, human beings form societies. To live in society they have, consciously or unconsciously, to accept, as we have seen, the norms which constitute the particular society. The object matter of social science is therefore the *regulated co-operation for the satisfaction of wants.* ("Das auf Bedürfnis befridigung gerichtete geregelte Zusammenwirken der Menschen.")

Now at least the field is clear. We know the boundaries of social science, its form determined by the outward norm, its content being co-operation for the satisfaction of wants.

We see what deep influence Kant, as well as Marx, has had on Stammler's thought. In outlining the formal side of social science we see the first application ever made of the epistemological method on social science, while, in his definition of the Matter of Society, we see a critical modification of Marx' conception of society.

This analysis Stammler follows up with the demand for a general and fundamental uniformity of social phenomena, which alone in social science as in any other science can give relevance to every single and separate investigation.

Stammler shows that our historians, economists, and jurists have nothing that could philosophically be considered a method. It is from the point of view of method that Stammler criticises the Marxian social philosophy so favorably and finds in his extensive criticism of this philosophy

his best way of explaining his own point of view. According to Stammler the Marxian philosophy is infinitely superior to the historical school of law with its mystical historical Volks-soul and the ethico-historical school of economics with its confused and subjective teleology.

Erroneous as the materialistic interpretation of history may be, it is from a formal epistemological point of view the greatest advance in social philosophical thinking ever made. It does away with any mysticism of the "Volksseele" stamp and with any kind of irresponsible subjectivism.

Marx declares that, in order to satisfy the wants of life, men enter into certain relations with one another. These relations are relations of production. The relation of production is therefore the fundamental unity; all ideas of right and law, religion and custom, are superstructures to suit the status quo of the system of production, and are to be traced strictly causally from their basis—production.

The monistic tendency of this system is very commendable, but Stammler shows that the basal formula of this system contains logical errors. Marx understands under production the technique of economic life. The science of technique, however, is a consideration for natural science only. Should it be understood not in the sense of abstract science, but in the sense of technique actually applied by society in its working for the satisfaction of its needs, then it presupposes already the outward norm, the framework of law, usage, and custom. No social life, as we already have seen, can express itself outside of this framework. Law and custom are the logical prius and social production is only possible within these limits.

It is further an entirely unwarranted and arbitrary assumption, that fundamental needs of society are entirely of a materialistic economic nature and that all other ideas of humanity, ideas of right and wrong, æsthetical and religious ideas are necessarily causally dependent on the so-called "material" wants and the conditions of production. The causal relation of the different ideas can only be determined by special investigation of each special case.

A monistic system of social science does not involve making all social life dependent on one specific kind of human wants and particular species of human activity. A monistic system, according to Stammler, means but scientific autonomy, independence of any kind of causes which do not belong within the limits of social science. It eliminates everything that cannot be rationally understood within the borders of the regulated co-operation for the satisfaction of needs. Stammler himself puts it in the following words: "Diese Theorie sucht die Ursachen und die Wirkungen auf socialem Gebiete in der Einheit des ganzen des geselnhaftlichen Lebens der Menschen zu erfassen. Sie nimmt nur eine einzige Erfahrung des socialen Menschendaseins an und verwirft das einsetzen von Ursachen, die nicht selbst innerhalb des ganzen dieser sozialen Erfahrung zu begreifen sind" (page 315).

So long, therefore, as we are interested merely in the genetical side of social happenings, systematic application of the principle of causality, *i. e.*, the tracing of the ideas to the social wants, and the systematic classification of social phenomena are the only instruments of scholarly research. Causality is here the supreme and ultimate law. But social science has another side. The so-called "social question" is not an historical question, it is a systematic question, and systematic questions in social science are teleological questions. We have seen that society exists only under outward norms and rulings. *What meaning has the greater part of the norms under which we all live? All customary and statutory law is in its nature teleological. It is introduced to establish a certain order; it looks forward toward an aim to be achieved.* We call one law beneficent and the other absurd; do we judge them by their causes or by their results—do we judge them by a causal genesis or by some standards of what we in our common language call fairness and squareness?

Causality is impotent to offer us a law for our aims, a formula for the right kind of outward norms.

If we classify social phenomena and explain them genetically, *i. e.*, from the point of view of causality, we by no means

exhaust the uniformity of social life. Causality and uniformity are not at all identical. Causality is a mere form of perception, and uniformity is ultimate unity. If we place causally the manifold phenomena of nature under certain unities, we create natural laws. The same causal method is, however, not applicable to human activity. If a human deed has actually occurred, we can grasp it as having been casually created, but the category of causality cannot be applied to future actions in as far as these are not theoretically known to be causally unavoidable incidents of nature.

An action to be accomplished in the future is an aim. The direction of consciousness towards an object as one to be attained is called will. Will is accordingly not a mystical inexplicable inner force, but it is simply and solely a direction of consciousness, and this direction is always present when in our consciousness an idea is present of an action to be accomplished.

Now comes the question what is the uniformity for aims, that is the supreme law of the will? Uniformity is here to be sought according to the same formal method as in natural science. Uniformity is the final unity. The setting of aims which one desires to reach grows out of the empirically given and conditioned situation of the one setting the aim; and in so far as he forms purposes, they must fall into the framework of a possible realization, if they are not to be mere visions. But among these aims we make a distinction according as they are justifiable or not, just as we distinguish between true and false in the doctrines and views of natural science. A justifiable purpose and a justifiable choice is one which in its special instance corresponds to a universally valid law of telos. To decide in what justifiability consists, a formula is necessary which gives the conditions of a uniform purpose in a formal general statement and according to which the quality of objective justification accrues to every individual instance of purpose. The end, then, is that which is free from all chance empirical conditions of a concrete aim; in other words it must be an absolute unconditional final aim.

This final aim is the idea of a goal by the attainment of

which man would be led by no subjective special aims, by no chance desire, and by no concrete personal wish. This final aim is therefore only an idea to which no experience may correspond, which nevertheless gives a goal and guiding star for the carrying out of individual human aims, which alone by it can be brought together in unity and uniformity and which thereby has a regulative significance for human will (*wollen*). Free will, freed from all empirical conditions, so placing its aims and so choosing them that they shall be led in the straight line of the absolute final aim,—that is the uniformity of the telos that we denominate in our language "ought."

If we want to find a supreme uniformity for social ruling, we hunt for the supreme unity for all social individual aims. Our social existence, which presents us as men working and living together under an outward norm, completes itself in doing, willing, and working, whereby, however, the individual will and activity even in the best case are not free from subjective individual motives. The idea of social common life would be accordingly the idea of a human commonwealth in which everyone wills and acts wholly free from subjective impulses in all social relationships. *The social ideal is a commonwealth of free willing men.*

This ideal is a purely formal thought, valid as an objective sign-post for all social strivings of all peoples and all times.

The social ideal is no prophecy that social evolution will take place in this direction, but it is the supreme unity for all social aims, and it is a method by which concrete single aims referring to given circumstances can be divided into the objectively justifiable and the subjectively unjustifiable.

These are the fundamental ideas of Stammler, the framework of his social philosophy and jurisprudence. The form of social life is its norms and regulations, its matter the purposeful co-operation for satisfaction of wants. The form and the matter are inseparable, they are the two aspects of the Idea of Society. There is therefore no such thing as a science of political economy independent from considerations of statutory and customary law.

While Stammler seems to be in extreme opposition to the historical school, he is actually a necessary further development of this school. His system appears to me as a systematization of the historical ethical view. The historical school of law did not understand the deeper teleological content of the doctrine of natural rights: but industriously and clearly refuted its superficial historical errors and contributed greatly to the clear exposition of the eternal becoming of our social life. The historical-ethical school of political economy contributed not less, and has accomplished the most valuable results without having yet outgrown the condition of mental chaos. It teaches that at various times the uniformities of economic phenomena which one is accustomed to speak of as laws vary, that the economic laws in the mediæval burg were fundamentally different from those prevailing in the capitalistic society of our day. An explanation for these differences is however in general not given, and when given is vague in character, such as, *e. g.*, "Evolution of production," "The influence of new political theories," etc. Just as vague and indefinite was the ethical teleology of the historical school. In both directions we see Stammler bringing with his epistemological analysis and formulas, precision and exactness.

Stammler's book is not light reading; it is abstract and written in a style greatly influenced by Kant. And while I believe that Stammler has greatly contributed to the advancement of social science, I venture the heretical opinion that were not Stammler a great practical lawyer, a fascinating and powerful orator, and above all a wonderful teacher, his theories would not have had that great influence which Stammler's powerful personality has in fact effected.

For over twenty years the German Government worked on a new civil code for the whole empire. Just as was to be expected the leading jurists of the historical school fought bitterly against the codification, as the new code broke all historical local, customary, and statutory law of the thirty odd German kingdoms and principalities. And as was to be expected the new code found in Stammler its most ardent and

eloquent apologist, first, because the new code meant a moral and social advance; second, because so much discretion is left with the judge that in many respects he has the power rather of a Roman praetor than of a modern judge. The element of equity "nach Treu und Glauben," "nach guten Sitten," "bona fide" permeate the code. Not only was Stammler the champion of the new civil code, but what is more important in the eyes of the judiciary and the legal profession, he has become the most influential and most learned exponent and interpreter of the new code.

Of course any thinker can interpret ideas only as co-ordinated with his general point of view. Thus the new German code became in Stammler's hands an annex to his system. This code leaves so much room for equity that Stammler's interpretation of the problems of equity, in the light of his social philosophy and especially from the viewpoint of his system of social teleology, has left a deep impress on Germany's theoretical and practical jurisprudence.

It has not been my intention to give an exhaustive criticism of Stammler's system, but rather to point out his fundamental ideas. Some of Stammler's views, as, *e. g.*, his logical analysis of the conception of social life, are so conclusive that, in my opinion, they will become axioms of social science; other theories, tho regarded by their author "sub specie æternitatis," are of local significance and temporary value. Stammler, while a practical jurist, is above all an abstract thinker. He has never taken part in practical politics, but his theories, strange as it may seem to an American, have had a profound influence on Germany's political situation.[5] Under the influence of Stammler's work the theorists of the German Social-Democracy, with Edward Bernstein, Conrad Schmidt, Ludwig Woltman in the lead, started the movement "Zurück zu Kant" and gradually are being transformed from a revolutionary socialist party to a peaceful social-reform party.

[5] A rather lengthy account of Stammler's influence on the doctrines of the German Social-Democracy the reader can find in my article "Die Krisis der Socialdemokratie" in the *Jahrbücher für Nationaloekonomie und Statistik*. 1899. Band XVII. Heft 6.

The more progressive and influential members of the party have abandoned the Utopia of a communistically organized society and have adopted as their aim the abstract Ideal of Social Justice and the forward movement towards this ideal as their watchward.

Stammler is at present but forty-eight years old. The world therefore may justly expect a great deal more from him. But "on revient toujours à ses premiers amours," and I have reason to believe that Stammler's work for the rest of his life will lie entirely in the province of practical jurisprudence and philosophy of law. Stammler has accomplished a great deal for jurisprudence and social science, but greater than the influence of Stammler the scholar is that of Stammler—the *man*, and Stammler—the *teacher*. It would repay any educator to see Stammler teach. No matter how dull and indifferent a student is, if he attends a few of Stammler's lectures, he yields to the charm of Stammler's personality, he falls in the net, he is Stammler's sure victim, there is no escape. Outside of the lecture room in his private study, at his dinner table, or the "Kneipe" of the Staatswissenshaftlicher Verein Stammler will show a deep and sincere interest in each student personally, but in the lecture room he is the high-priest of science and, seemingly at least, perfectly indifferent to the human beings who crowd around him. No matter about what Stammler is lecturing, he begins his discourse in a cold, official, dignified, and reserved manner, and then a very remarkable change takes place. The subject takes hold of him, and he grows in dignity as his voice grows in volume and his words in appealing power. It is not himself that Stammler reveals, but science and its glory.

Whoever has had the privilege of being taught by Rudolf Stammler cannot but recall the deep meaning of the artist who created a statue and loved it so mightily that the marble became a living being.

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## IV

## SOME REQUIREMENTS OF UNIVERSITY LIBRARIES

The inexorable law of utilitarianism, in its widest sense, demands that modern education serve some useful purpose; nay, more, that the individual studies pursued have utility of some kind for their end and aim.

This by no means restricts the curriculum to a commercial basis. Happiness and spiritual welfare are quite as essential to a utilitarian doctrine as material betterment. But this does measure mental activities by the results effected upon the general welfare of the individual.

In other words, we are more and more estimating the value of everything by the results, and eliminating that which is proven useless by this test.

On this principle, libraries are measured by their usefulness. Library methods are tested by their effectiveness. The days of gathering and hoarding a collection of books for the sake of the books themselves are past. The days of justifying the expense of collecting and maintaining a library, by making it useful, are at hand. "By their works ye shall know them" is as true of libraries and librarians as of any other institutions or individuals.

That the usefulness of a library is not so much dependent upon the number of volumes it contains as upon the facilities for using the books, is no longer in need of proof. On this principle facilities for use become of first importance in any library of considerable richness of materials.

Owing to the conglomerate character of the institutions of higher education in the United States, a university generally includes an academic or collegiate department, and if rated by numbers this is usually the largest department.

This condition complicates the problem of use of a library in such an institution greatly, since the conflict of rights of different users is one of the most difficult matters to adjust.

Speaking generally, there are three classes of users of a large university library. First, the officers of instruction and administration, whose use of books is largely the home and laboratory use, and, as regards time, of indefinite duration. Second, the graduate students, whose use of books is primarily for investigation and secondarily for reading purposes. Third, the collegiate students, who use books (*a*) for collateral reading in connection with their college work; (*b*) for research, or what by courtesy is called research—at least for practice in research methods, and as such this use is of no small value—and, finally, (*c*) for reading purposes, as distinguished from work.

It is seen at once how these various needs overlap, and therefore conflict, and require the constant adjustment and discrimination dependent upon conditions and circumstances.

The first duty, after providing materials for use, that devolves upon the librarian is to preserve the rights of all users of a library from being encroached upon by those who thoughtlessly or willfully—the results are the same—ignore the fact that library books are not provided for the exclusive use of any one person, and that no individual has the right to assume that he is the only one in need of a particular book. This consideration of the rights of others is the hardest lesson to impress upon the users of a library.

The first and all-important factor in this most important measure of preserving the rights of all users is the system of records, by which it may be instantly known where every book not in its normal place is at any time to be found. It is by no means enough to know that a book is not in its place, and no one has a right to conclude that for this reason alone it is drawn out. Such a conclusion may serve the needs of a public library, but the serious worker needs to know where a book is and how long he may expect to wait before he may have it. The book in temporary use, the book in the bindery for repairs, or the book deposited in some place other than the

usual one, may be the volume most needed, and, therefore, calls for as much care in recording as one sent to another library or lent to a personal borrower.

The next step is to determine in a general way the relative importance of the needs of the various classes of users, without giving cause for a charge of injustice.

Manifestly, the privileges accorded to a professor in charge of the work of a department, as regards the books in his own field of work, should be greater than those accorded to students in the same department, or officials of another department. Again, the need of a book for serious work by anyone takes precedence over a recreative use. And, finally, a book needed by more than one person at the same time, satisfies this need best when kept in the library.

These possible variations, both as to time allowance and number of volumes, because of the different classes of users and their varying needs, requires a flexibility in records of use wholly unnecessary in libraries where all users are equal before the law.

The use of the books of a large university library falls in two main divisions: The use of the books within the library building and the use of books outside.

Taking the several classes of users in the order mentioned, our attention is first directed to the provisions made for the use of the books by university officials, and other scholars, within the library building. The usual general reading room and the various seminary rooms do not meet all the requirements. Nor does the use of portions of the stack-rooms for such purposes, however convenient to the user, prove satisfactory to all users. The general reading room is too noisy from the constant coming and going of other readers; the seminary rooms, if not already too crowded to allow the addition of such large collections of books as are sometimes needed, are used for seminary sessions, and thus all other work at times is interrupted; the stack-rooms allow the greatest freedom in the use of materials with the least trouble to the user, no doubt, but the temptation to take books from their normal places without record and leave them out of place is so great that it is well-

nigh impossible to maintain order, without which all users suffer.

This special need is best met by a large workroom to which scholars not otherwise provided for may be assigned, and into which books and manuscripts too valuable to be allowed outside of a fireproof building, may be carried, together with all needed materials from any division of the library, here to remain until done with.

The books in these various collections, for each worker's materials are kept together, are so recorded that should one be asked for, it can be brought from the temporary place as easily as from its permanent place. Works in such constant use need to be inspected more frequently than those not thus removed, and this plan facilitates this with the least amount of labor. Then the process of removing such books to another room suggests even to a careless person that they be recorded, and thus the first law of heaven and a library is more easily maintained.

The next class of users whose needs are to be provided for is the advanced or graduate student body—the university students as distinguished from the college students.

Such students, pursuing subjects that fall within the range of some one or more of the several departments of the university, are usually provided for by the department seminary rooms. These rooms are furnished with the standard working materials dealing with the main subjects investigated supplemented by such books from time to time as the special subjects may require in addition. These rooms do not differ greatly from the general research room, except that their use is restricted to certain groups of subjects and they have a more or less permanent collection of reference works. Such rooms are the laboratories of literary workers, with all the resources of the library at hand.

The third class of users consists of the college students, whose needs are just as important as any other class, altho less productive of tangible results, perhaps.

Their need for books in the library is for collateral reading along the lines of their college work, and for practice in re-

search. Books wanted for these purposes cannot be lent for home use without danger of infringement on the rights of others.

The library laboratory for undergraduate work is best provided in the form of a large general reading room in which is kept on open shelves a large collection of the latest and best general works on all subjects of human interest.

One of the more important factors in the education of a college student is the familiarity he acquires with the worthwhile books on many different subjects. Never again, in all probability, will the opportunity plus the leisure be his to get just this branch of his training, the need for which will often be felt later in life.

Association with such a collection, day after day, affords the best means for the college student to know the standard works in all subjects and to learn how to use them with facility. Such an association may be the means of determining the line of thought or investigation most congenial to a student's taste and thus decide for him the field in which he is to specialize, should his taste lead him to pursue any subject so far.

The second grand division of library use may be designated the out-of-the-building use, as distinguished from the use by the several classes within the library building.

Some libraries, devoted exclusively to work, make strong claims for the principle that no books should be allowed out of the building, that better work can be done within the library, where the facilities are adequate to the needs.

This may be true when all use made of a university library is for work and when all said work can be done apart from scientific laboratories. But so long as there are college students there will be a home-use need and so long as there are experimental laboratories there will be a laboratory use of books, and these two special needs demand some degree of circulation of books to fulfill the library's highest function.

Taking the several classes of users in the same order as before, the home use made by university officials claims first attention. This may be for the purpose of supplementing the personal library in the home study, or for use in laboratories in

connection with special investigation or experimentation. The laboratory use of books may vary from a single volume to a collection of several hundreds of volumes, in which case it becomes in all essentials a branch library. Such a collection, when under the care and supervision of the main library, with facilities for sending books back and forth as needed, greatly increases the efficiency of the library. The essential difference between the personal account and the laboratory or branch use is this: in the laboratory use the record at the main library shows where a particular book may be found and used, whereas, when a book is out on personal account, it is simply "out," so far as the inquirer is concerned.

This difference allows greater liberty, as to number and time, in the laboratory use than in the personal use without doing violence to others' rights.

The primary need of the graduate student for books is satisfied by the provision made for work in the library, but if the work be of such a character as needs be done in a laboratory, then the laboratory use, with limitations, must be extended to this class of users. This is done by means of a general collection for the use of all working in a given place, or by allowing each a separate list for which he is responsible.

In addition to this use, an advanced student has need for books for recreative reading. He cannot fairly be expected to own books for this purpose, as can a university professsor, being without fixed habitation as yet. Such a need a university library may not be bound to supply, but the library fills a higher function than otherwise, when it meets this demand.

The home use of books by the college student, or undergraduate, is a matter of more serious import than many libraries fully realize.

The practice in research work is provided for by the general reading room. The reading collateral to the university work may or may not be done in the library, depending somewhat upon the number of students doing the same reading.

The most important need that the collegiate student has for books is not for research purposes, altho this need is similar

to that of the graduate. The important thing for the college student, next to learning how to use books as before mentioned, is to absord, as it were, quantities of literature, history, art, and other subjects, needful to prepare him for the highest usefulness as well as to enable him to live the fullest life.

Up to the time of going to college, the average boy or girl has had little time, inclination, or even opportunity to do more with books than is necessary for entrance. Once in college, the conditions are best for getting that culture to be had from books. Never again, probably, will he find the opportunity, the time, and the stimulus to do that which will always be regretted if left undone.

Two things are essential to the college student that he may get a wide range of reading. First, sufficient leisure, gained by not attempting too much prescribed work, and second, books; books that may be carried home and used at odd moments; books that come as friends into one's home life, to be enjoyed at every leisure moment.

For this purpose the home use of books by college students is of the greatest importance. No institution has any moral right to call together a body of students at this period of their development, without making adequate provision for this need. Too immature themselves to realize the importance of this need students may not demand what is not given to them freely, but in after years, when it is too late to make good the loss entirely, the man or woman may justly censure the institution that withheld from him the food he needed most at that time to enable him to grow into the full stature of man.

WILLARD AUSTEN

CORNELL UNIVERSITY LIBRARY,
ITHACA, N. Y.

## V

## THE GROWTH OF THE PUBLIC HIGH-SCHOOL SYSTEM IN THE SOUTHERN STATES AND A STUDY OF ITS INFLUENCE[1]

On January 1, 1850, four years more than a half century ago, there were in the United States eleven high schools that had a course of study from two to four years in length, laid out progressively so as to cover branches of mathematics and foreign languages together with advanced studies in literature, natural science, and ancient history. These eleven schools received pupils promoted on examination from a graded course of study in elementary branches.

Thirty-three more of this modern type of high school were added before January, 1860, making a total of 44 high schools, of which 3 were in the South. At that time (1860) the wise people shook their heads and said: "It is doubtful if the Constitution permits the education of the people in free high schools. District schools may be all right enough, but our forefathers never intended to furnish a liberal education to all children at the expense of the taxpayer." The friends of free high schools were somewhat uneasy over this. But the next ten years saw the number of high schools rise to four times their former number—the 44 of 1860 had increased to at least 160 in 1870; and in the next ten years the increase continued, so that by 1880 there were in operation nearly 800 public high schools. These reached 2526 in 1890, 6005 in 1900, and 6318 in 1902.

The most noteworthy circumstance connected with this is that the increase of public high schools has gone on in all sections of the country. Take, for example, the North Atlantic States; these already had 786 high schools in 1890,

[1] A Paper read at the annual meeting of the Southern Educational Association at Atlanta, Ga., January 1, 1904.

and they came near to doubling their quota in 1900, in which year they reported 1448, and in 1902, 1477. The South Atlantic States had only 115 high schools in 1890, but in ten years they had in operation nearly four times as many, for they report 449 in 1900, and 466 in 1902. The South Central States did even better than this, for they increased their public high schools from 158 in 1890 to 675 in 1900, and again to 746 in 1902. The Western division of States—including those on the Pacific Coast and in the mountains—had 91 high schools in 1890, 270 in 1900, and 339 in 1902. The North Central States have long led in the number of public secondary schools. They had in 1890 more than half of all the high schools in the country, and they have more than half now. Their quota increased from 1376 to 3290 public high schools in 1902.

Even the schools for colored people in the South have a considerable number of secondary pupils. In 1880, while the population of the entire country sent 4362 in each million into public and private secondary schools and colleges, the States of the South (including Missouri) had 1289 colored students in each million of colored people. Altho this was less than one-third of the average quota for all the people, yet it was encouraging, because it showed that much was being done to furnish an educated ministry, qualified teachers, and physicians. The quota in a million of colored persons in high schools and colleges has increased slightly from decade to decade, owing chiefly, it would seem, to the increase in colored high schools in Southern cities. The quota in the million was, as I have mentioned, 1289 in 1880. It rose to 2061 in 1890, and to 2517 in 1900—quite a noteworthy increase of itself, altho eclipsed by the general increase for the entire population. In these statistics of colored people I have included both secondary and higher education, because it is not easy to tell how large a proportion of those enrolled in colleges are up to a college standard, and how many are only advanced to the secondary rank. I have also counted together the public and private schools for secondary and higher work.

I have prepared a table showing the number of high schools

in the South (including West Virginia and Missouri) in each year from 1889-90 to 1902 inclusive, giving the annual number of pupils enrolled, and the number of graduates:

HIGH SCHOOLS IN THE SOUTH (INCLUDING MISSOURI AND WEST VIRGINIA)

| Years | No. of High Schools | Secondary Students | Colored Secondary | Graduates |
|---|---|---|---|---|
| 1889–90 | 343 | 23,832 | 2,122 | 2,666 |
| 1890–91 | 436 | 27,864 | 1,308 | 3,146 |
| 1891–92 | 513 | 33,847 | 1,744 | 2,675 |
| 1892–93 | 460 | 33,719 | 1,463 | 3,345 |
| 1893–94 | 798 | 49,275 | 2,009 | 5,056 |
| 1894–95 | 1,070 | 61,511 | 2,107 | 5,729 |
| 1895–96 | 1,065 | 63,569 | 1,904 | 5,477 |
| 1896–97 | 1,069 | 66,653 | 2,599 | 6,408 |
| 1897–98 | 1,135 | 74,070 | 3,539 | 7,170 |
| 1898–99 | 1,207 | 80,482 | 4,037 | 8,037 |
| 1899–00 | 1,348 | 86,795 | 5,055 | 8,813 |
| 1900–01 | 1,431 | 89,784 | 5,676 | 9,468 |
| 1901–02 | 1,378 | 88,262 | 5,259 | 9,185 |

It shows an enrollment of 23,832 pupils in 1890, and 88,262 in 1902. Of these, 2122 were colored students in 1900, and 5259 colored students in 1902.

I present next a comparative table showing the Southern high-school enrollment by States for 1890 and 1902.

The State of Alabama reports the greatest rate of increase, being from 375 pupils to 3780, or ten times the former number.

The next State, South Carolina, shows an increase from 524 high-school pupils to 7½ times that number, or 3980.

Tennessee and Mississippi increased to five times their former number. Maryland, North Carolina, Florida, and Texas increased to four times their former number, and the following to 3½ times; Georgia, Kentucky, Louisiana, Arkansas, and Missouri. No Southern State increased to less than double its former number of high-school pupils. The colored high-school pupils increased to 2½ times their former number, and the increase of the total enrollment is from 23,832 pupils to nearly four times that number, namely, 88,262 pupils.

It will naturally be asked what is the significance of this concerted and prodigious increase in free public high schools all over the country, and especially in the South.

SECONDARY STUDENTS

| State | 1890 | 1902 |
|---|---|---|
| Totals | 23,832 | 88,262 |
| Delaware | 545 | 1,087 |
| Maryland | 1,141 | 4,508 |
| District of Columbia | 1,746 | 3,339 |
| Virginia | 2,059 | 4,122 |
| West Virginia | 694 | 1,727 |
| North Carolina | 349 | 1,339 |
| South Carolina | 524 | 3,980 |
| Georgia | 1,676 | 5,958 |
| Florida | 509 | 1,901 |
| Kentucky | 1,511 | 5,390 |
| Tennessee | 966 | 5,233 |
| Alabama | 375 | 3,780 |
| Mississippi | 694 | 3,691 |
| Louisiana | 837 | 3,008 |
| Texas | 3,574 | 15,080 |
| Arkansas | 861 | 2,933 |
| Missouri | 5,771 | 21,186 |

It is ingeniously suggested by some that these pupils are studying less useful branches of learning than they studied in the elementary schools—that, in short, the branches taught in the high schools are of the kind known as ornamental rather than solid acquisitions.

Let us look at this question for a moment.

In 1890 I made out a list of branches that ought to form a secondary course—branches that were substantial, and such as, if pursued vigorously, would give mental strength as well as insight into nature and into human society. Since then the high schools have reported the numbers of pupils studying languages, mathematics, natural science, and history.

Let us go over the results as to the South (omitting Missouri) in this comparison:

Forty-nine thousand nine hundred and sixty-eight pupils were studying algebra last year (1902) in the South Atlantic and South Central States.

Algebra is a difficult study, but it gives an insight into the construction of arithmetic. If a person in later life should forget his arithmetic he may readily reconstruct its rules, if he has studied algebra at some time in his youth for a year. He can perform far more difficult problems by its method than he

ever could perform by simple arithmetic. No advanced course of study in mathematics can be pursued except by aid of algebra.

Besides these students in algebra, there were 20,908 youth in the Southern high schools studying geometry. This branch shows the necessary structure of all bodies that exist in space. Algebra and geometry are tools of thought that enable man to control matter and motion. They are among the most practical of all branches for giving directive power.

My attention was called to this practical phase of high-school mathematics thirty years ago when one of our high-school boys in St. Louis, Mo., took a humble position in the water-works office of that city. Some pipes in the lower part of the city next to the river burst, and the new ones by which they were replaced did not last long. This boy made a calculation, and found that the pressure of 150 feet of water is something like 60 pounds to the square inch, and that this was more than the regulation pipe used could stand, and, on request of the manager he made a formula by which the proper regulation standard of pipes could be fixed. This boy was promoted.

In 1902 there were 3518 pupils in Southern high schools studying trigonometry, the branch which underlies surveying, navigation, and astronomy. Its practical use is evident.

There were 1992 students in astronomy, 4890 in chemistry, 3142 in geology, 28,495 in human physiology, 13,185 in physical geography, and 16,034 in physics. It is well known that physical geography bears nearly the relation to common geography that algebra bears to arithmetic: it enables one to explain and see the necessity of the various processes of formation that are going on constantly in the structure of the earth's surface.

Physics, on the other hand, or natural philosophy, describes and explains mathematically the various properties of matter and force, showing the structure of all kinds of machinery and giving an insight into electricity, steam, attraction of gravitation, the dynamics of water, the nature of the solar spectrum, the structure of the telescope, the microscope, and the like.

Of all branches that have to do with the conquest of Nature, by human industry, physics is the most important for the pupil.

In the languages, 3972 pupils in Southern high schools were studying French, 4922 pupils studying German, 1372 Greek, and 41,759 were studying Latin. Latin is the stock out of which the Southern languages of Europe are formed. Even the Northern languages get the most important part of their vocabularies from it, namely, the technical words for the sciences and the words expressing fine shades of thought and refined emotions. Even a brief study of Latin, say six months, is of immense value to enable one to be at home in the English language, of which three-fourths of the vocabulary is of Latin origin.

Besides these language studies which deal with a knowledge of human nature, the high school gives other studies that help powerfully in the same direction: 32,889 pupils in Southern high schools studied general history last year; 19,048 studied civil government and thus did something to prepare themselves for their duties as citizens; 29,830 studied the history of English literature and did special work on literary works selected from the great authors.

This is an age of the conquest of Nature by machinery. One hears gladly the strong speeches made by progressive men in the South in favor of manual and industrial training—there ought to be free industrial schools enough to enable each youth to learn the trade of his choice without resorting to the tedious and wasteful process of apprenticeship. It ought to be possible for any middle-aged man or woman to attend an evening school or a day school and learn a new trade in a few weeks or months —or, what is of quite as much importance to them, learn how to improve themselves in the trades they have been following for twenty years without acquiring any considerable skill because of having no opportunity to learn the most approved new methods and manipulations. All this is true, but it remains a fact that the pupils who have well learned the common-school branches are far better fitted to use machinery than the illiterate laborers who have served their long apprenticeships of seven or even of twenty-seven years. And as for the pupils who have

learned the high-school course of study, they are out of sight of the pupils who have completed only the three R's in their ability to meet difficulties in adjusting machinery, keeping it in repair and at the highest rate of speed. The high-school pupils furnish a far larger percentage of inventors—they can devise and suggest improvements to their machines. Besides this, they show more capacity to direct the labor of others. They can meet and overcome obstacles—hence they furnish such overseers as are cheap at high wages.

While education of the people of the South in elementary schools has made great progress in the past twenty years—reaching larger numbers of the population—about 14 in the hundred in 1870, 18 in the hundred in 1880, and 23 in the hundred in 1900—increasing school property from sixteen millions of dollars in 1875 to sixty millions in 1900—increasing its annual school term, in twenty years, from an average of 92 days to an average of 115 days in the South Atlantic division, and from 79 days to 101 days in the South Central division—while this progress in education has gone on the South has increased the productive power of the individual by nearly 50 per cent. It has produced a laboring class that can use machinery to assist the strength of bone and muscle. It has made possible the great change of vocations from the production of mere raw materials to the production of the finished product. This is a change going on in all civilized countries. The machine is coming in at one end and the mere drudge is going out at the other. The uneducated, unskilled man is not needed, for his hands and muscles cannot compete with the machine. But he is needed in the work of directing the machine. He is therefore called upon to step up from the occupation of the mere drudge to the occupation of the overseer of the machine. The change from hand-work to brain-work is a necessity. But this cannot go on without schools that fit the pupils out with alert and versatile intelligence.

Even in the fertile fields of the South, unskilled labor does not bring good wages. The skilled laborer in the city, using tools and directing machinery, earns and receives an average of double the wages that the farmhand gets.

But machinery is going out from the city to the farm, and the farm, too, needs fewer laborers, and can furnish more productions. The surplus farmers must go into mechanical industries, into transportation and commerce. Fewer and fewer people are needed for the production of the raw materials of food, clothing, and shelter all the world over, thanks to mechanic inventions which are pushing the mere illiterate drudge out of his vocation. He must climb up or else starve in the attempt to compete with the machine.

This lesson is illustrated in a wonderful manner by the history of farming in the great Northwest. I have prepared a comparative table showing how machinery is changing the conditions of wealth in that region. The census reported the value of the products of the agricultural industry in North Dakota in 1890 at 32 cents per day for each man, woman, and child in that State. In 1900 it reached 55 cents a day, the highest average production ever reached by agriculture in America, so far as I am able to ascertain. In that State the laborer uses the most improved machinery and the steam engine for a motive power. But manufactures have not come there to any great extent—only 3 cents a day in 1890 and a slight rise in 1900, making a total of earnings of 58 cents a day for each inhabitant, without counting earnings from commerce and transportation.

Iowa is an example of a much older and more populous State which has introduced machinery into agriculture and also developed a large amount of manufacturing in its cities and villages. In the decade of 1890-1900 it increased its agricultural production from 23 cents to 45 cents per day per capita—doubled it in ten years—and also increased its manufactures from 6½ cents to 8 cents a day earnings for each inhabitant in the same decade. This gives an aggregate of 53 cents a day per inhabitant from these two sources alone without considering vast earnings from transportation and other sources which would swell the total to over 60 cents a day for each member of the population, containing 365 days to the year.

Some States, counting the North Atlantic division and adding Delaware and Maryland from the South and Ohio and

Illinois from the West, have very large earnings from manufactures.

The average earning per day of each inhabitant of Connecticut is 50 cents from manufactures and 8½ cents from agriculture (total 58½ cents). This agriculture is market-gardening, which is rendered profitable by its proximity to great cities. The small State of Rhode Island leads all States in its quota of earnings from manufactures, which rise to the sum of 56 cents per day per inhabitant, to which it adds 4 cents a day from agriculture, making a total of 60 cents a day.

Massachusetts obtains 47 cents from manufactures and 4 cents from agriculture per day for each inhabitant, while New York gets 39 cents a day from manufactures and 9 cents from agriculture. Pennsylvania gets 34½ cents from manufactures and 9 cents from agriculture. The income from the mines of Pennsylvania is large, so is that from transportation in New York, Pennsylvania, and Ohio.

Transportation is real production of value because it carries goods from the place where they are not needed to the place where they are of use. Cotton carried from New Orleans or Savannah to Lowell or Manchester has increased its value by the cost of freight.

The percentage of increase in value of manufactures in the South is greater than it is in the other census divisions, but its results do not appear so significant as they really are, since they are the beginning of what will be a vast and profitable industry in the South within, comparatively, a few years. North Carolina increased its daily per capita of earnings from manufactures from 3 cents to 6 cents—doubled it; while it increased its agricultural earnings from 8½ cents per day to 13 cents (12.8 cents). South Carolina, Georgia, and Alabama made increased earnings in manufactures from 1 cent to 4 cents per day each inhabitant, and the same in agriculture, reaching an aggregate of 19 cents each per capita. Virginia, Florida, Mississippi, Arkansas, earned 21 cents per day per capita, Tennessee 20½ cents, Louisiana 22 cents, Kentucky 25 cents, and Texas 26 cents daily per inhabitant.

Counting in all the earnings in whatever line of industry, the

nation averaged in 1880 about 44 cents per day for each man, woman, and child; and in 1890 it rose to 51½ cents.

The wisdom of founding a free-school system, seen from an economic point of view, lies in the fact that it makes possible an easy change of vocations among its people. It puts alertness and versatility in place of mere brute strength and persistency. More than this, it puts aspiration and ambition into its pupils. It makes them acquainted with what mankind have done, and teaches them the way in which they can do equal or greater things.

All over the South cities are growing in size and number, cities bring together the producer and the consumer. The city, too, is the necessary resort of the surplus laborers no longer needed on the farm. We do not need so many people to get for us the raw materials of food, clothing, and shelter, but we need more and more people to turn these raw materials into articles of comfort and luxury. We need more and more people to work at transportation and intercommunication. We need more persons in the work of giving culture to the rest. The savage tribe, unaided by machinery, can afford only one man for the production of ornament—nearly all are needed for the supply of food and clothing of the plainest sort. But the partly civilized tribe can afford ten persons for the production of ornament and luxury. The proportion increases rapidly as we ascend in the use of machinery, and the time has arrived now when more than a hundred in a thousand are needed for the production of ornaments and luxury.

In transportation and intercommunication with railroads, telegraphs, postal systems, newspapers, books, libraries, schools, and churches—here the line of industrial occupations rises from mere transportation thru intercommunication up to culture. In these employments more and more persons will be needed.

Instead of ninety-nine drudges producing raw material, and one person working to furnish and diffuse directive intelligence, it will come to pass in the distant future that one man will, by the aid of machinery, furnish the raw material, another man's labor will make the useful articles for food, clothing, and shelter, ten more will elaborate articles of comfort and luxury,

the rest, more than eighty per cent. of the community, will take up vocations having to do with protection and culture.

The work of education is the direct work of helping individuals to help themselves. It does not go on as fast as it should, nor as far as it should. The average schooling for the entire nation is at present only 1032 days for each person. This would give five years—each year of 200 days—enough to take a pupil thru the primary schools of a city and a little more.

Small as is the schooling given by our nation to its people, some five years apiece, on the average, it suffices to make reading and writing universal, and with them gives also a limited acquaintance with the rudiments of arithmetic and geography. This fits the citizen to become a reader of the daily newspaper, and thus to bring him under an educating influence that will continue thruout his life. A newspaper civilization is one that governs by means of public opinion. By aid of the printed page, the school-educated person makes present to himself daily the events of the world and lives an epic life. A certain portion of the day of each citizen is given to contemplating world events; he sees the doings of his state and nation, and forms his own opinion.

It is the greatest and most important service of our educational system to give people the power to readjust their vocations, and to climb up to better paid and more useful industries out of lives of drudgery. This is a sufficient reason in itself for establishing a public-school system. But to give the people the power of participating in each other's thoughts—to give each one the power to contribute his influence to the formation of a national public opinion—is a far greater good; for it looks forward to the millennium, when no wars will be needed for the mediation of hostile ideas.

The study we have made on the growth of the public high-school system in the South reveals to us the presence and activity of a great auxiliary force that has come to aid the elementary schools in this their great work.

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## VI

## EXERCISES IN THINKING ABOUT NUMBER AND SPACE: TRANSITION TO ALGEBRA AND GEOMETRY (VI)

### About Number

*Extension of Fundamental Count-Number Operations to the New Numbers: Negatives and Zero.*

(After a brisk dialectic review in which both the *motive* and the *process* of the foregoing making or invention of new numbers are again disclosed, and in which it is brought home to the appreciation that it is *we* who need and *we* who invent the new numbers, it should be explained that the *barred* numbers are called *negative integers,* that the *bar* is commonly written in front instead of above, that, in contradistinction from the negative integers the count-numbers are named *positive* integers, and that these are always either preceded or understood to be preceded by the plus sign to correspond with the bar or minus sign of their inverses. Easily prepared written and oral exercises will then serve to clarify and make familiar, but these should be exercises in *subtraction* of *positive* integers, requiring the negatives and zero merely for *answers.*)

*Addition and subtraction extended.* We have now two sets or series of integers. What are they? What other number have we? Henry may go to the board, draw a straight line and on it plot both the old and the new numbers. Is he *com-*

*pelled* to put the positive numbers on the *right,* as he is doing? If he chose to put them on the left, where should he place the negatives? Could he actually plot *all* the integers of either kind? I will ask him, then, to use continuation marks to indicate—what? Joseph may answer. While we cannot actually plot *all* the integers, we may *suppose* it done and talk

as if it were done. Let us do so. Now let us suppose the line cut at the zero point and then let us imagine the positive half turned (*rotated*) so (showing as with a pointer) in the plane of the board halfway round on the zero point as a pivot. This done, how will the two halves of the line lie? In how many ways (directions, *senses*) may the turning take place? Name them. (Clockwise and counterclockwise.) Let us suppose the turning to be counterclockwise. What point will point 1 fall on? (On point $\bar{1}$, or $-1$.) What point will fall on point $-2$? $-5$? $-a$? $-b$? $-x$? $-y$? What point is the *inverse* of 2? of $\bar{2}$? of $\underline{x}$? $x$? Does *every* number fall on its inverse? Would the answer be the same if we turned the negative half-line round onto the positive?

On looking into a plane mirror, you see an image of yourself. Which is nearer to the glass, you, or your image, or is the distance the same? Try it with this glass as I move it now nearer to, and, now farther from, you. You and your image seem to keep at equal distances from the glass, and it is just as it seems. Now think of the zero point of our line as being a two-faced mirror and that the positive integers look into it from one side and the negative integers from the other. What point would be the image of point 1? of $-1$? of 5? of $-8$? of $a$? of $\bar{a}$? What series would be the image of the negative series? of the positive series? Would the zero point see itself in the glass? Why not?

Be very careful now and tell me, John, whether we have learned to find the sum and the difference of *every* pair of numbers on this line. (No.) Have we learned to add and subtract every pair of one of the series, but not of the other? (Yes.) Which series contains the numbers that we *have* learned to add and subtract? What use have we made so far of the negative numbers and zero? (Merely to *answer* certain *subtraction* questions about the *positive* numbers.) Have we learned to add negatives? (No.) To subtract negatives? (No.) What do you think our next business should be? (To learn to add and subtract both negatives and positives.) I suppose we *might* make *new* rules for adding and subtracting the *new* numbers, but which do you think would be easier and

simpler, to *make new* rules or *use* the *old* ones? Well then, let us do the latter. Are we all agreed? Be sure, then, that you stick to the old rules and see what happens. And we will use the line to help us.

I think a good way to begin will be to find out, if we can, what and how many *kinds* of exercises we are to learn; to find out, in other words, what and how many kinds of questions we are to try to answer. Do you agree? Joseph may tell me in his own way just what it is we have agreed to. Is Joseph right, William? Tell me exactly what Joseph said, and then in your own way state what *my* original statement was. Who will tell me one of our new questions. ($\bar{5}+2=?$ or $-5+2=?$) Name any other new kinds and I will place them on the board. For the present, we will omit questions about zero. We have, then, how many *sorts* of new questions? (Six.) How do you make sure that you have all of them, that none has escaped detection? Let us put them down in good order in a kind of table, and, Henry, as you are apt to write neatly, I will ask you to do the writing for us. But first I will make a heading and start the table, then you may finish it, with our help, of course. What do you suggest, Frank, for the next entry? Do you agree, Henry? Henry, you see, has to talk and think and listen and write, all pretty much at the same time. That is hard to do, I know; but I know, too, that he can learn it, provided he is of the right sort of fiber.

| We are to learn (or to solve the problems) | We are to answer such questions as |
|---|---|
| to *add* a *positive* to a *negative*, | $\bar{5}+2=?$ or $-5+2=?$ $\quad -a+b=?$ |
| to *add* a *negative* to a *positive*, | $2+\bar{5}=?$ or $2+(-5)=?$ $-b+(-a)=?$ |
| to *add* a *negative* to a *negative*, | $\bar{2}+\bar{5}=?$ or $(-2)+(-5)=?$ $(-a)+(-b)=?$ |
| to *subtract* a *positive* from a *negative*, | $\bar{2}-5=?$ or $(-2)-5=?$ $(-a)-b=?$ |
| to *subtract* a *negative* from a *positive*, | $2-\bar{5}=?$ or $(+2)-(-5)=?$ $a-(-b)=?$ |
| to *subtract* a *negative* from a *negative*. | $\bar{2}-\bar{5}=?$ or $(-2)-(-5)=?$ $(-a)-(-b)=?$ |

Now write below the two old problems, which we *have solved*, the two sorts of questions we *have* learned to answer. (To add a positive to a positive, to subtract a positive from a positive.) How many more new questions than old? The new are how many times as many as the old? Why are the new the more numerous? How many questions in which *both*

numbers are *positive?* (Two.) How many in which *both* are *negative?* (Two.) How many in which the numbers are *like* in sign? (Four.) How many in all? (Eight.) How many in which the two numbers are of inverse sign? Do these varieties seem to you to be properly distributed? William may explain what he means by his answer.

A little while ago someone, it was Frank, I believe, mentioned an addition question about that lone number, which serves as a sort of partition between the positives and negatives, I mean the number that tells you how far you are from yourself. Frank, I will ask you to put that question again. (Say, $0+3=?$) Considering both addition and subtraction, zero will give us how many new problems or questions? Let us get hold of all of them and count. How many? (Ten, including $0+0$ and $0-0$.) Let us now make a table of them like the foregoing. This time Joseph may do the writing. (Here have table compiled by conjoint participation of class, not neglecting the *general* forms like, $0+(-a)=?$) Of the ten problems, how many deal with zero alone? How many with zero and positives? With zero and negatives? Does the distribution seem right? Does zero give us the entire ten new questions? How many are due to *combinations* of zero with positive integers? With negative integers? The questions and problems in the two tables, are they really *new?* (Yes.) In what sense? (They are questions about *new* numbers.) But there is a sense—do you not think so?—in which the questions are *old?* What is it? (They are addition and subtraction questions.) Altho old in one sense, they are new in another. Let us continue to call them new because that is convenient. Do you agree?

I wonder which is the most intelligent of the lower animals. Have you ever wondered whether they can really count? Maybe one of you will try sometime to find out. It might take several years to make sure. Even tho nobody can answer the question now, don't you think it is worth asking? If the lower animals can't count, then it would follow that it is not necessary for an animal to count in order to live. How do you think men and women could get along if they were not able to

count? Men and women, are not they animals, too? The horse or the elephant may neither really count nor really measure, but men and women are a kind of animal that does both. That is because they find it both interesting and necessary to ask two very fundamental questions. Can you name them? They are: How many? And how much? These questions are by no means the same. Can you point out a difference? Which one leads to *measuring?* Which to *counting?* But measuring and counting are not the same thing, are they? Show how they differ. To find how long this room is, we should do—what? (Measure.) To do that, I might simply stretch a string from one end to the other, and then, if asked how long the room is, I might just *show* the string and say, "the room is so long." That would be measuring in its *purity,* and there is no counting mixed up with it. But is that what people generally mean by measuring? In practice, when asked to measure, you are generally expected to do *more,* you are expected to *count* also, and, instead of showing the string that reaches, you are to count and then to name the *number* of feet or yards in it. But while, in our *talk,* we do not as a rule take care to distinguish between counting and measuring, the two things are in *fact* never the same; and there might be an animal, I suppose, which could do one of the two but not the other. However that may be, notice now how we are both *driven* and *led:* our needs compel us to ask, how many?—necessity is the mother of counting and count-numbers; again, we have *other* needs that force us to ask certain questions about these numbers which the numbers *can* answer, and then we are *led* rather than driven to ask similar questions (like, 5 from 3 gives what?) which the count-numbers *can't* answer; next, instead of dropping these questions, we *choose* to *invent* numbers that will *answer* them for us; these new numbers, once in our possession, persuade us to ask still other questions, new ones, which otherwise we should not have dreamed of. And so, now pressed by necessity and now lured by curiosity, we move up the ascending path of number knowledge, gaining as we go greater powers and larger views. Do you agree with what I have just said? Tell me now fully, in

your own way, Henry, how the matter appears to you; while you are talking or when you have done, I may ask you some further questions, and, too, I shall want John or someone else to explain the matter in *his* way. Just imagine that we need light and try to give it to us.

And now who will tell me what stage we have reached? What unanswered questions confront us? [See the tables above.] And what *agreement* did we make as to how we are to be guided in seeking the answers? Very well, we will, then, stick to the old rules. Shall we first collect them together in a table, or shall we call them to mind as we need them? Either way is good enough, but, if you are willing, I believe I should prefer the latter. All ready? Then let us begin the attack by considering the first problem of the first table. We will start with the *special* question: $\bar{5}+2=?$ Why is it special? In learning to add and subtract the *old* numbers, we did it by *stepping* along the line having the numbers plotted on it. Let us try this old way with the new numbers and new questions. Where, then, *begin* to *step?* What is the old rule, that is, where begin in such an old question as $5+2=?$ or $a+b=?$ At 5 or at $a$.) Note that in such *ordered* exercises, stepping *starts at* the *first* number, or its point. Then in the new exercise, $\bar{5}+2$, where begin? (At $\bar{5}$.) Go which way? (Rightward.) Why? (Old rule.) Show it, Henry. Go how far? Where stop? Then we have what *equation?* ($\bar{5}+2=\bar{3}$, or $-5+2=-3$). Look sharply now, is this statement correct: $5+\bar{2}=\bar{2}+5$? (Yes.) Why? (Old rule.) What is it? (Commutative Law of Addition.) Then $\bar{2}+5=?$ (3) And so not only the first, but also the second, question of the table is answered. But $\bar{2}-5=?$ ($\bar{3}$) Had we learned that before? (Yes.) Then, tell me, is this statement an equation: $\bar{2}+5=\bar{2}-5$? Why? Let us see just why we are *compelled* to say the right and left members are equal, for I think we are *compelled*, are we not? The right-hand member is equal to what number? And the left is equal to what number? We have, then, *two* things, two number expressions, *each equal* to a *same third* thing, to the same number, 3. What is to be *inferred?* Is there any escape? If by measurement,

or in some other way, you find that George is just as heavy as James and also that James is just as heavy as Samuel, can you *infer* a *new* statement? What is it? Measurement gave you the first two statements, and, *then*, what gave you the third? (Reason.) Now, Henry, tell us just how the "number" question and the "boy" question agree. (Dwell here a little, and on occasion turn and return to kindred matters of pure logic.) Having found what $2+\bar{5}$ equals and what $2-5$ equals, then reason tells you what? What have you to say in regard to the statement, $a+\bar{b}=a-b$, is it correct? (Yes.) Is it general or special? Translate it into English. (*Adding a negative integer gives the same result as subtracting the corresponding positive integer.*) And this fact shows you how to change *addition* of *negatives* into what? (*Subtraction* of *positives.*) Explain, exemplify. (If I wish, instead of adding the negative, I may *think* the sign reversed and then subtract.) You can now answer all such questions as: $\bar{8}+6=?$ $6+(-8)=?$ $4+\bar{1}=?$ $\bar{1}+4=?$ *You* may propose some such questions and we will join in finding the answers. (Here give practice, writing the numbers with their signs, also in columns.)

Are you ready for the third question of our table? What is it, Samuel? ($\bar{2}+\bar{5}=?$) Have we not already added 5? Wherein? (In finding that ($2+\bar{5}=\bar{3}$.) Then we know where to begin in answering that third question, and which way to go and how far. Frank may tell us. (At $\bar{2}$, leftward, 5 steps.) And the sum is what? ($-7$) And hence we have what equation? ($2+\bar{5}=\bar{7}$, or $-2+(-5)=-7$.) Now, Joseph, suppose you add $+2$ and $+5$ and then *reverse* the *sign* of the *sum*, what is the result? If, then, the addends are both of them *negative*, how may you find their sum? (*Reverse* the addends, then add, then reverse the sum.) I suppose you think that is a rather roundabout way, but isn't it interesting? In the like roundabout way, we can, if we choose, find the sum of positive addends. I wish Henry would show us how. Are these statements correct: $\bar{2}+\bar{5}=\bar{5}+\bar{2}$, $\bar{a}+\bar{b}=\bar{b}+\bar{a}$? (Yes.) Why? (Old rule.) Which one? Here give and have pupils give exercises.)

Our fourth table question is what? ($\bar{2}-5=?$) Now, John,

a little while ago we found that subtracting 5, or $a$, gives same result as—what? (Adding $\bar{5}$, or $\bar{a}$). But you have just found that $2+\bar{5}$=what number? Then, tell me what number $\bar{2}-5$ is equal to. Where begin to step? Go which way? Where stop? Answer the last three questions for the problem: $\bar{a}-b=?$ Assign $a$ and $b$ various values and find the answers. How change such *subtraction* questions into *addition* questions that have the *same* answers?

We come now to the fifth of our questions, the hardest of all: $2-\bar{5}=?$ But *why* hard? For you know where to *begin* stepping, I am sure, and how *many* steps to take. Do you know these two things, Frank? Very well, what question comes between starting and stopping? That is it—*which way to go?* Who can tell? John says rightward; William, leftward. Let us hear your reasons, William. Are you convinced, John? Then won't you give us the reasons for *your* answer? Pretty good (perhaps, probably not good enough). Let us make perfectly sure in this matter—which way to step. Look sharply at these questions, already answered: $2+5=?$ $\bar{2}+5=?$ $2+\bar{5}=?$ We *have* answered them, have we not? Examine the first two and tell me how to get either from the other. (*Reverse* the *first* number.) Does that change the direction of stepping or only the place of starting? Now look at the first and third of the three questions and tell me how to change either into the other. (Reverse the *second* number.) Does that change the starting place? What does it change? (*Direction* of *stepping* after the start.) What did you say, Frank, produces that change? Very well, hold that in mind. I wonder if you know another way to reverse the direction of stepping. Look at these two questions: $\bar{2}+5=?$ $2-5=?$ How get either from the other? (*Reverse* the *sign* of *operation*, the sign of the thing to be done.) Does that change the starting place? Does it reverse the direction of stepping? Show it, William. Now tell me how many ways we have of reversing the direction of stepping. What are they, John? But if you reverse the direction *twice*, what is the final direction? If you are going North and you *reverse* and *reverse again*, what direction will you then be going in?

Is it correct to say that *two reversals leave the direction unchanged?* I believe Henry can now answer that hard question: $2-\bar{5}=?$ How many reversals will change the easy question, $2+5=?$ into that hard one? In the easy question you step—which way? Step, then, which way in the hard one? So the hard one is now become easy? What is the answer to the former question? To the latter? So, I think, we have an equation. What is it? $(2+5=2-\bar{5}.)$ Are these statements correct: $3+\bar{7}=3-7$, $4+\bar{9}=4-9$? How say by *one* equation that *all* such statements are correct? $[a+\bar{b}=a-b$, or $a+\bar{b}=a-(-b)]$ Translate that general statement into English. (Subtracting a negative integer gives the same result as adding the corresponding positive integer.)

How does the sixth question of our table differ from the fifth? In finding the answer, then, we start at a different place? But go in what direction? (The same.) Then tell me the answer. Give me the corresponding equation. $(2-\bar{5}=3.)$ So you see the difference between two negative integers may be positive. When will that be the case? Look at the statement $x-y=d$. How must $x$ and $y$ be related that $d$ shall be positive? Negative? Zero? (Practice.)

Now suppose, again, that the zero point is a two-faced mirror, and that you can go thru it along the line without damaging either yourself or the glass. As you step along the line, what does your image do? Suppose you by stepping answer the question: $5-3=?$ Let us see what your image does. Where do you start? Where does your image start? You go which way? Which way does your image go? Where do you stop? Where does your image stop? What question have you answered? And your image, what question has it answered? $(5+\bar{3}=?$ or $5-\bar{3}=?)$ What sort of question must you answer so that you and your image will pass each other? [Here give practice in the various forms of questions of the foregoing table.]

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## VII

# THE AMERICAN COLLEGE COURSE

BY A GRADUATE OF WILLIAMS COLLEGE

After the many learned and very interesting discussions of the problems connected with college education in the United States by men who are the acknowledged leaders in educational thought, which have been published during the last two or three years, it is a little presumptuous for a graduate of only five years' standing to take up the argument. But the discussion is primarily for the benefit of those who are being prepared for life under present-day conditions. Their wants and desires, representing the demand which educators are trying to meet, must be, therefore, of considerable consequence. The views of men who have recently graduated from college, have completed their professional training, and are gradually establishing themselves in their life-work, tho immature and imperfect, should be interesting and perhaps instructive as presenting the point of view of the parties most affected.

The question which more than any other has recently received the attention of educators is the length of the college course. Many of the ablest think the course is too long and should be shortened by one or two years. Harvard has gradually shortened her course so that it now represents very little more than three years of the sort of work required in other colleges. The tendency of the great universities seems to be to take away from the undergraduate college and add to the university. The average student graduates during his twenty-third year, and there is a general feeling among students and educators alike that he should be able to commence his professional study earlier. But if the opinion of the graduates of recent years could be obtained, I feel sure that an overwhelming majority would oppose any change which would gratify this

feeling at the expense of the college course. The change can best be made in the grammar and preparatory school.

The average boy ought to finish his grammar-school and high-school course by his seventeenth year. That an additional year is generally required is the fault of the system in vogue in these schools. At seventeen he is sufficiently matured in body and in mind to get away from the irresponsibilities of home life and to be thrown on his own resources. At that age he cannot too soon be placed in a position to develop self-reliance and independence of thought and action. While he remains in the high school, living at home under the influences of his childhood, admirable tho they may be, he will almost inevitably continue to let those about him do his thinking and regulate his actions. His views will be those of his father and mother, and of his teachers. The building up of character which comes from independent thought and action will necessarily be hampered. The college course stands for education in its broadest sense, for the development of character, not for mere intellectual training. The boy should enter college at seventeen, where he is at once compelled to stand for himself. In the choice of his studies and the selection of his friends, in the decision of the many questions which the freshman is called upon to settle for himself, he discovers that he has a mind and will of his own, and he cannot shift the responsibility to the parental shoulders. He becomes a member of one of the most democratic and inspiring communities in the world, in which any petty meanness in his character will be at once discovered, and if suppressable it will be suppressed, and in which his finer qualities will be quickly rewarded by the loyal confidence and friendship of his fellows. All this is true if he has been fortunate enough to have selected one of the country colleges. If he has entered the undergraduate department of one of the great city universities, his lot may not be so pleasant, but he will be called upon for even a greater degree of independence and strength of will.

If it is admitted that the boy should enter college at seventeen at the latest (probably he is not sufficiently matured much before that age), it follows that the grammar and preparatory

schools should have him ready at that time. How they shall accomplish this is not for me, or even for college educators, to say. This specific result seems to be what is required, and it is for those who are in charge of grammar and high schools to accomplish it. There is no doubt that it can be easily done, and that, too, without any radical change in the existing system. The almost unanimous testimony of intermediate and high-school educators who have written recently on this topic bears me out in this contention. There is considerable waste of time in the grammar school, the course is loaded down with too many educational frills that count for nothing in the final result. Less system and more progress are called for. Certain subjects may well be eliminated also from the high-school course of the man who is to enter college. For instance, the attempt often indulged in of giving a man a smattering of the sciences in the high school could well be dispensed with. The college can best attend to that.

High-school teachers complain that the entrance requirements of some of the colleges are too high. Probably this is true, and Harvard seems to be the worst sinner in this respect, as her object seems to be to compel the preparatory schools to do work which can be best attended to by the college. The inevitable result is to postpone the time of entering college beyond the age of seventeen, as things are now, to nineteen, which, as we have seen, is much beyond the natural and proper time when a boy should be thrown on his own resources. But the entrance standard of most American colleges is not too high, and can be easily met if the grammar and preparatory schools between them shorten their somewhat cumbersome courses by a year. What Harvard gains by forcing this year of additional work on the preparatory schools is a little difficult to see, unless it is made necessary by her elective system.

There has been considerable talk about extending the high-school course two years, graduates from the six-years' course going direct to the university to complete their education, the small college and the college course, as such, disappearing. I believe it would be a splendid thing for education generally if the high-school course could be so extended, but I am quite

confident that the college course would not be seriously affected. This six-years' course would probably be taken by the class of men who now enter the professional schools or go into business after completing the high-school course. Such a course would be of great alvantage to these men and to education generally, and should be the minimum requirement for entrance to the professional schools. But the sort of men who now go to college, those who could or would go, would still begin their college course at the end of four years in the high school. The broad and liberal training of the last two years of the college course, and the priceless associations arising out of college life, will prevent the high school from ever becoming a serious competitor of the college in its own field.

Now as to the length of the college course. A year being saved in the grammar and high schools, and the student having entered college at the age of seventeen, why should his course there be shortened? He will graduate at the age of twenty-one, and I don't believe that anyone will seriously contend that a man is ready for the exacting work of the professional schools before that time. A boy is not fit to take up the work required in any of the law or medical departments of our great universities, and I believe that the experience of most of us has been that we were rather more boys than men at the age of twenty-one. The average professional course takes three years, so that our student will be equipped for his life-work at twenty-four, a year before he has reached his full maturity, and quite as soon as it is advisable for him to undertake the responsibilities of a profession.

How can the college course be materially shortened without taking away much which is essential to a sound, broad education? The work of freshman year is certainly necessary. We have gone far enough in curtailing the study of language, ancient and modern, and of mathematics. One year of Greek and Latin in college should be the minimum. The student, on completing his high-school course, has acquired a working knowledge of the structure of the ancient languages, and has reached a point where he can read them with pleasure and profit, from a literary point of view. To stop there is like

abandoning a crop as it is about to mature. The same argument holds true with mathematics. Arithmetic and algebra are very valuable of themselves, but they are also even more valuable as the tools with which to work out and enjoy the higher branches, in which the student gets his first clear understanding of the philosophy of numbers, and some more adequate comprehension of the infinite. Can the college afford to give any less time and attention to English literature and composition, or to history, the sciences, philosophy, political economy, government, or social science? To take a year out of the work now done by the average college student is to take away a fourth of what seems essential to anything like a broad and liberal education.

To reduce the course to two years must necessarily reduce the college to the rank of the German gymnasium, or to the rank of the high school with two additional years added. No possible rearrangement of studies could make up the loss. Language and literature or philosophy, or political science or history, probably several of the great branches of learning would have to be abandoned *in toto*, or else thoroness in any would have to be abandoned for a mere smattering of all. The two-years' course could not possibly be a substitute for the four-years' course. But it might be a very good thing in itself, the four-years' course being retained for the class who now go to college. It would be superior to an additional two-years' course at the high schools, and would appeal to many who would not otherwise take a college course.

Such a course, if adopted by the colleges at all, would most properly belong to the great city universities. It would be hopelessly out of place in the average country college, and would be a disturbing element in the present admirable arrangement in those institutions which could not be tolerated. Nearly all of the professional schools are branches of the universities, and it is therefore proper that the universities should undertake the task of providing an adequate preparatory course for those who do not care to spend four years at college before taking up their professional study. The men who would take advantage of a course like this are mainly men born and reared

in the city, where the influences surrounding them tend to anything but habits of studiousness and thought, and among whom the controlling idea seems to be to get started in life as soon as possible, getting into the professions with the least expenditure of time and effort, and without much regard as to the adequacy of their preparation. The higher education in its true sense has very little to attract these men. What they want is the intellectual training which will fit them for their professional careers, and nothing more. The two-years' course would supply their needs very completely. They would get this sort of training, but in the nature of things little more could be expected.

Would not such a course, however, tend to lower and degrade the undergraduate work of the universities? Can they afford to abandon to such an extent the ideas of liberal culture which have meant so much to the American college in the past? Would not the result be to attract a very large number of men of low ideals and of inferior mental and moral character? If so, would not the presence of such men following a course of study which would be frankly utilitarian rather than broadly educational in character, have a disastrous effect upon the undergraduate department of the university? Would not the result be that the better men who seek education for its own sake would be driven away to those institutions which, refusing to become mere preparatory schools for professional work, would have steadfastly maintained the present standards, aiming at culture and the development of character as the true end of education? I believe the college, as distinguished from the university, has little to fear from such a course, but the university may well hesitate before undertaking such a perilous experiment.

As a graduate of Williams, I believe I am safe in saying that the Williams alumni are almost unanimously opposed to a departure from the four-years' course, and none more strongly than the recent graduates. I have been unable to find a single one who takes any other view. I am inclined to think that the same can be said of most of the other smaller Eastern colleges. It is true that there is nothing magical about four years as to

the length of the college course, but it is also true that this period has been found to be ideal for the country college.

It takes the freshman the whole of the first year to disassociate himself from the leading strings of his boyhood and to settle himself comfortably into the new interests and activities of the college. During sophomore year he commences to understand himself. Work in the debating societies, in the literary work and other activities of college life, as well as the work of the classroom, discloses to him his latent tendencies and something of his capacity for different lines of mental effort. Vague ideas of what his life-work is to be are gradually developed by this process, so that by the beginning of junior year, in most cases, he has a pretty clear idea of what he is fitting himself for, and he selects his course of study for the last two years with this in view. The two years of college life have developed in him self-confidence and independence. He knows all of his classmates thoroly, and most of the upper classmen as well. He has reached a point where he is at last in full touch with the life of the college, ready to get the best of what it has to offer. The best of college life does not begin for most students till about the end of sophomore year. This is because so much of the first two years is taken up with the transition from the old life to the new, from boyhood to manhood, and in developing the student and in discovering him to himself. He enters upon the last two years with a fairly clear understanding of himself and of the end which he is seeking. Looking at it from the purely pedagogical standpoint, he has passed thru the severe mental discipline of Latin, Greek, and mathematics, has obtained some insight into science and history, and is ready for philosophy, political and social science, history, and for advanced work in science, mathematics, and the languages. His work up to the end of sophomore year is for the most part preparatory. Most of it is indispensable, however, if he is to be ready for what is to follow. His work during the last two years is the work of a man, calling for his best thought and the exercise of his best powers of reason and judgment. I regard this period of my college life as invaluable. The inspiration given by these last two years is too good a

thing to sacrifice to the somewhat hazy desire of the student to hurry into his professional work.

The social side of college life, including not only the social relations of the men with each other and with the professors, but also the literary, musical, dramatic, and athletic organizations, has apparently been lost sight of in the recent discussions of the college course. Yet the testimony of graduates, the oldest as well as the youngest, will bear me out when I say that it is almost as valuable a factor in the liberalizing education given by the college as is the curriculum. It is regarded by many as even more valuable. To spend four years among natural surroundings which are ideal, in the most intimate association with men who are manly, clean, and strong, under influences which sternly repress everything that is mean and sordid in a man's character, is no small thing. The cultured youth of the city and the husky product of the farm meet on a perfect level, as members of the truest democracy in the world, and they both profit by the experience. There is no community anywhere else where ability and worth are so quickly and cordially recognized and rewarded, or where the meaner traits of character are more quickly discovered and shamed out of a man. The friendships formed in college, which so often last for life, are not to be idly dismissed in estimating the value of the college course as it is.

If the course be reduced to three years, the senior year is taken away. I regarded my senior year as the fruition of the other three. To have broken the associations which I had formed, and to have passed that year at one of the great universities, would have been to deprive myself of the very best part of my college life. I believe nearly every Williams man feels the same way, and while that feeling exists there is little need of talking of a three- or two-years' course to them. And conditions there are probably indicative of the situation in the other smaller New England colleges. This feeling is not based on sentiment, but on substantial reasons, as I have tried to show.

From the standpoint of the country college, the two-years' course is clearly impossible. The student would graduate at

precisely the time when his real interest in the college had been awakened, and just when the truly intellectual and broadening part of his work was to begin. His college course would mean very little to him. If some of the humanities should be worked into his course, it would mean a sacrifice in language and literature or mathematics and science, probably in all, and he would have taken up the higher subjects before he was ready for them. If the country college understands its function, and the real source of its strength, the four-years' course will remain.

The college must continue to grow along the lines of its past development. It is true that the college of fifty or seventy-five years ago did not give as broad or comprehensive a course as the college of the present day, and that the course then offered supplied admirably the wants of the students of those times. But it does not follow that the course then given would meet present wants. The development of the college course has been a perfectly natural one, keeping pace with the general development of society, and meeting the higher demands which society has made upon it.

I doubt if there is any real desire among college students for a shorter course at college. I do not recall a single instance of a complaint as to the length of the course among the men I knew there. In many of the colleges, including Williams, a student may take the prescribed work in three years if he pleases, and this is entirely feasible for the brighter men if they elect to confine themselves to the curriculum, avoiding other branches of college activity. It speaks well for the good sense of the students that instances of men who do this are extremely rare.

The solution of the difficulty which I have suggested is, first, to shorten the combined courses of the grammar and high schools, or their equivalents, by a year; and, second, to extend the length of the high-school course in the cities and larger towns to six years for the benefit of the men who cannot or will not take a college course. Such work naturally belongs to the high schools rather than to the college or university. The difficulty with my first suggestion is that college educators

cannot control those in charge of the grammar and high schools, and cannot compel them to make this change. But if the change cannot be secured, I believe it will be better to let things remain as they are than to sacrifice the college course to the gain of a year in time. Of what importance is a year, more or less, in comparison to the acquisition of something like real education as an equipment not only for material success in life, but also for its enjoyment?

The criticism of my suggestion by grammar- and high-school teachers would probably be that I have made the old mistake of regarding the grammar and high schools simply as preparatory schools for the colleges, whereas the great majority of students in those schools never think of going to college; that many of those who do go do not decide to take a college course till toward the end of their high-school course. It must be admitted that these schools must be conducted primarily for the benefit of this majority, and I believe the shortening of the course by a year, most of this shortening process coming in the grammar school, would not be inconsistent with the best interests of this class, but quite the contrary. Such a change would fit the course more naturally to the student. At thirteen, the average boy is no longer a child; his place is naturally in the high school, not among the children of the grammar school. A year being saved, he would be much more apt to take the two additional years in the high school, if he should not go to college, and the gain to the boy and to education generally would be very considerable.

There is a general impression in the public mind, which seems to be shared to a certain extent by educators, that the average college student doesn't do much work, and that the college course tends to develop mental inertia and laziness. This may be true in those great institutions in which the elective system has reached its fullest development, where it is so easy to select the "snap" courses, pay little attention to them during the year and pass them off by means of a few weeks of cramming; but it is certainly not true of the representative American college, in which the elective system is so arranged that the student cannot avoid selecting a course of study which

is rationally arranged and is broadly educational in character, and in which good daily work in the classroom is insisted upon. The work of the curriculum alone is sufficient to keep most of the men fairly busy, even those whose greatest ambition is to scrape thru with as little effort as possible. Then there is the work in the debating societies, in writing and editing the college publications, in athletics and dramatics, besides the independent reading and study along congenial lines which most of the men do, all of which make the life of the average college man a very busy, wholesome life of earnest effort. More than three-quarters of the men I knew in college were hard workers, doing as much as could reasonably be expected of the average man in any calling. Many of the balance were apt to spend their vacations working off conditions.

The college course is unquestionably the best preparation for the professional school. The college man is trained to study, to think, and to write effectively, which gives him a great advantage over the man who has not had college training. He has acquired the tools which he will need in his professional work, and, of course, he has gained the necessary intellectual training. But mental training may be acquired in many other ways, and tho the general results may not be as good, keenness and strength of mind are as apt to be found in the man who enters the professional school after an active business training of several years, or after several years of teaching. Therefore it is hardly just to require a college degree as an entrance requirement to the professional schools. The courses offered in these schools are not in their nature university graduate courses, to be taken only by those who have completed the undergraduate work. They are strictly utilitarian in character, their sole purpose, as stated in their catalogs, being to prepare men for the practice of one or another of the professions.

Take the law schools for example. All that is required in order that a man may successfully take up the study of law is, first, a good general education, such, for instance, as is possessed by the high-school graduate; and, second, mental strength and maturity. No more should be required, as a

preparation for law study, than what is reasonably necessary to enable the student to take up and to carry thru the study of law successfully. Of course, it would be very fine if all lawyers should be broadly educated men of culture and refinement, but the business of the law school is to turn out able lawyers, properly equipped for the practice of the law, and the possession of culture and refinement has no immediate bearing on this result. If the universities are to take upon themselves the work of educating lawyers for their profession, and there can be no question that they should do so, then they are unjust in shutting out men who are fully competent for the work simply because they have for some reason failed to take a college course. Having a practical monopoly of this work, they owe a duty to the profession and to society generally which they violate in imposing this requirement.

The law-school course takes generally three years, and as things are, three years is not too long, even for the college man. Colleges are not as effective in preparing men for the law school as in fitting them for the medical and technical schools. All the leading colleges offer highly specialized courses in chemistry, biology, physics, and anatomy, which are as technical as any branch of legal study, and which are certainly no broader in their general educational value, but quite the reverse. These courses form a part of the curriculum of the medical or technical school, and the student continues in those institutions a course of study with the general nature of which he has become familiar at college. The young law student, on the other hand, comes to the law school densely ignorant of the nature of the study he is to take up. He has learned no law in college, and has learned practically nothing of its history and development. If he enters any of the higher-grade law schools in which the modern or so-called " case " system is employed, like the law departments of Harvard, Columbia, or New York University, his difficulties are much greater, as the system of instruction differs sharply from what he has been accustomed to.

Why should the colleges discriminate in this way against those who are to study law? It is said that courses in law are

purely professional courses, and do not belong to the undergraduate curriculum, the object of which is to give a broad general education; that law courses are narrow, and would not tend to that end. No lawyer educated under the case system would take the position that a course in the law of contracts, for instance, is narowing; that it is not broadly educational. There is no course given in the colleges to-day which equals it in developing reason and logic, or which is so conducive to clear, exact thought, and there is no course which would be more valuable in giving the students an understanding of affairs. The law of contracts embraces the principles that govern men in all their business relations. Its development has been the development of the business world. It is, therefore, as broadly educational as any branch of sociology, and it is more efficient than mathematics in developing the reasoning faculties.

Every college should offer at least two legal topics as senior-year electives, taking together about five hours per week. I consider contracts and torts as the two best topics for this purpose, embracing the two main branches of private common law, and thru them a very good comprehension of all law would be gained. They would become among the most popular courses offered. They would appeal to almost every kind of student. They would remove the disgraceful ignorance of the history and nature of the law which is now so general among college men. They would give the future clergyman an insight into the world that might otherwise require years of practical experience. Such courses would temper idealism in all classes with practical common-sense thru the process of exact thought practically applied in the every-day affairs of men. That they would be invaluable to the future business man goes without saying, and they wouldn't hurt a doctor in the least. Such courses would be invaluable to the student intending to follow law. When I commenced my law work as a student in the New York University Law School, I realized this very clearly. A considerable part of the first year is lost in adjusting one's self to a course of study and a system of instruction which are entirely new. My subsequent experience as

an instructor in the same school has confirmed me in this view.

Here is another very simple way of shortening the period of preparation for at least one class of students. It may be said that this does not differ in principle from the plan of allowing the student to devote his entire senior year to law work. It may not in principle, but in the practical application of the two plans there is the widest difference. In the latter case the student remains a student of the college, with all the advantage of the college life and associations, which are at their best during the senior year. Two-thirds of his work is spent on the other branches of the college curriculum. Whether he goes to the law school or not, he will probably find the law courses taken at college at least as valuable from the standpoint of a liberal education as any of the others, and that is really the only question about which the college need be concerned.

The American college has had a splendid past, and it has little to fear in the future. There never was a time when the colleges were in abler hands, or when those in charge were actuated by more lofty ideals, or were more keenly alive to the demands of the times and the necessity of progress. True education, in the highest sense of the term, will always be in their keeping. Those of them which are now, or which may become, universities will work hand in hand with those which remain distinctively colleges. There can be no hostility between the college and the university. Each will continue to work for the same general end, the one helping the other in accomplishing the desired result, each with the elements of strength peculiar to itself. That result will continue to be to educate and develop the broad-minded man of high ideals, and the patriotic citizen, thoroly equipped for the service of his fellow-men.

WILLIAM F. WALSH,
Williams College, A. B., 1898

NEW YORK

## VIII

## HIGH-SCHOOL ATTENDANCE

One often hears the false statement that only about 5 per cent. of the school population ever enter our secondary schools. This ratio is determined by dividing the number enrolled in secondary schools in one year by the school population of the same year. They were, for example, in the State of New York, in 1902, 91,583 secondary students. Dividing this number by 1,790,500, the total school population for 1902, the quotient is, 5.1 per cent.

If this method of determining the extent to which the advantages of secondary education are enjoyed is correct, then the argument is plausible that the usefulness of public high schools is disproportionate to their cost. The argument may be stated in some such form as this: The value of elementary schoolhouses and sites in the State of New York in 1902 was $92,207,473. The number of children attending public elementary schools some portion of the year was 1,191,400, the ratio of value for each pupil being $77.39. The net property of New York secondary schools in 1902 was $30,725,707, the number of secondary students 91,583, the ratio of value for each student being $335.50.

Again, the cost of the common schools and allied interests in 1902 was $37,369,017, *i. e.*, at the rate of $31.37 for each child in attendance, while the cost of secondary education in 1902 was $6,627,709, or at the rate of $72.37 for each student in attendance. The question is now asked if there is not something wrong with a system of schools in which nearly a third as much money is invested as in the entire elementary school system and which costs annually for maintenance nearly one-sixth as much as the entire cost of the common schools and allied interests, and yet provides for only 5.1 per cent. of the school population.

But it is not difficult to discover the fallacy in the reasoning by which the conclusion is reached that only about 5 per cent. of the school population ever enter the high school. This we can do readily by reasoning in the same way regarding the elementary grades and infancy. As a matter of convenience recourse is had to the actuaries' tables for life insurance. If, basing our computation on these actuaries' tables, we substitute for the number in secondary schools that part of the school population shown to be five years of age and divide as before by the school population, it appears that only 8 per cent. ever enter the first primary grade. Carrying the same reasoning farther by substituting for the number in secondary schools the number of births in each year that produces the school population as shown in the same way, and dividing as before, it appears that less that 12 per cent. of the school population have ever been born.

With an eight-year elementary course and a four-year high-school course it is clear that, disregarding loss from death and other causes and distributing the school population equally among twelve classes, there could not be in the high school or in any four classes in the elementary school more than one-third of the school population. In other words, if a stated number of pupils enter school each year and all remain to complete an eight-year elementary course and a four-year secondary course, only one-third or 33 1-3 per cent. can be in the secondary school at once. Therefore, even if no allowance is made for death, failure of promotion, or other cause, the high school enrollment is about four times as large as commonly stated, for of the total school population (1,790,500) only one-third (596,833) can be in the high school at one time, while 91,583, or nearly 16 per cent., are actually there.

But we cannot ascertain how many could attend secondary schools and compare this number with the number actually found in such schools, without making proper allowances for loss thru death, failure of promotion, or other causes. We can readily ascertain the allowance to be made for death by consulting the actuaries' table of mortality, which shows that of 143,400 infants, 121,216 survive the first year; 113,519 the

second; 109,489 the third; 106,872 the fourth; 104,980 the fifth; 103,552 the sixth; 102,429 the seventh; 101,507 the eighth; 100,715 the ninth; 100,000 the tenth; 99,324 the eleventh; 98,650 the twelfth; 97,978 the thirteenth; 97,307 the fourteenth; 96,636 the fifteenth; 95,965 the sixteenth; 95,293 the seventeenth; 94,620 the eighteenth.

This shows that of all infants born, 73 per cent. reach the legal school age of five years, 68 per cent. fourteen years, the age of high school entrance, and 66 per cent. eighteen years, the age of high school graduation. (Returns from 73 schools give 17.74 as the average age.)

But as the actuaries' table is based on insurable lives only, *i. e.*, those passed by medical examination as in normal health and with full expectancy, it follows that the mortality is greater than is indicated. Moreover, the number of students over eighteen years of age in the secondary schools is more than offset by the greater number of pupils over fourteen who are still in the grades. The school statistics in a city of more than 25,000, where the average age of graduation was 18.5, give 10.9 as the per cent. of secondary students more than 18 years of age, and 11.95 as the per cent. of elementary pupils more than 14 years of age.

Inquiry shows that by reason of slow progress thru illness or other cause, certain pupils fail of promotion at the regular time. From reports of 20 districts differing in density of population and in variety of employment in the State of New York, with average population of over 115,000, it appears that 21 per cent. fail of promotion in the first school year from causes other than death; 17 per cent., the second; 16 per cent., the third; 16 per cent., the fourth; 18 per cent., the fifth; 15 per cent., the sixth; 17 per cent., the seventh; 17 per cent., the eighth; 18 per cent., the ninth; 20 per cent., the tenth; 14 per cent., the eleventh; 13 per cent., the twelfth; and 8 per cent., the thirteenth.

We are now prepared to make necessary allowances for loss thru death or thru failure of regular promotion. Applying these corrections, we reach the following close approximation of the maximum enrollment in 1902 of children in each grade

(a school year): 353,130 in the first grade; 288,700 in the second; 239,140 in the third; 196,390 in the fourth; 159,225 in the fifth; 132,585 in the sixth; 107,805 in the seventh; 86,745 in the eighth; 68,780 in the ninth; 52,060 in the tenth; 42,750 in the eleventh; 34,080 in the twelfth; 29,110 in the thirteenth. That is, these figures show a possible enrollment of 1,632,500 in the elementary schools and of 158,000 in the secondary schools.

Comparing the actual enrollment in the elementary schools with the possible enrollment, the ratio is 72.9 per cent. Comparing the actual enrollment in the secondary schools with the possible enrollment, the ratio is 57.9 per cent. Comparing the ratio of actual and possible enrollment in the secondary schools with that for the elementary schools, the result is 79.4 per cent. These facts are shown strikingly by the following graphic representation of possible and actual enrollment of pupils in the elementary and secondary schools of the State of New York in 1902.

Tho the elementary schools are aided by the compulsory education law and by the greater facilities offered those seeking an elementary education, the secondary schools make nearly as good a showing as the elementary schools, and these results would be still more favorable if all children of school age enrolled in private schools were considered.

This reasoning leads to the following conclusions:

1. The statement that only about 5 per cent. of the school population ever enter the high school is false, for by the same reasoning it can be shown that only 8 per cent. ever enter the first elementary grade and less than 12 per cent. have ever been born.

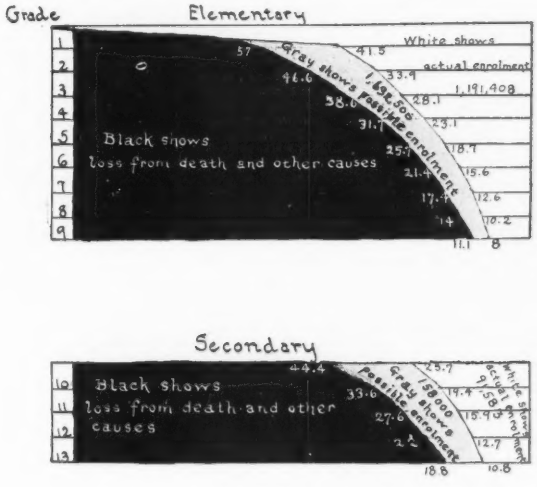
2. If there were no losses from death, failure of promotion thru illness or other cause, and if the school population were equally distributed, only one-third of the school population could be in our secondary schools at one and the same time.

3. Making necessary allowances for loss thru death, failure of regular promotion thru illness or other cause, it is found that the ratio of actual to possible enrollment approximates 73

to 100 in the elementary schools and 58 to 100 in the secondary schools.

4. The ratio of actual to possible enrollment in the elementary schools fell during five years 7 per cent.; the corresponding

Graphic representation of possible and actual enrolment




Comparative ratio of actual to possible enrolment

| | |
|---|---|
| Actual elementary enrolment 72.9% | |

| | |
|---|---|
| Actual secondary enrolment 57.9% | Secondary to elementary 72.4% |

ratio in secondary schools rose 7 per cent. At this rate the ratio of actual to possible attendance in the secondary schools would exceed the ratio of the actual to possible attendance in the elementary schools within six years.

## HIGH SCHOOL ENROLLMENT IN THE STATE OF NEW YORK, THE UNITED STATES, AND MASSACHUSETTS

Instead of the false statement that only about 5 per cent. of the school population ever enter the secondary schools of the United States, or the misleading statement that only 4.2 per cent. of the entire school enrollment were secondary students in 1902, it appears that the ratio of the actual to the possible enrollment in the secondary schools was 38.8 per cent. for the United States as a whole, 57.9 per cent. for New York State, and 83.8 per cent. for Massachusetts.

That the State of New York as a whole does not yet equal Massachusetts in the ratio to population of her secondary school enrollment is due to the fact that till recently there were no public high schools in the city of New York. Excluding New York City, which embraces about half the population of the State, the ratio for the rest of the State of New York is somewhat greater than that for Massachusetts as a whole. Between 1896 and 1902 the growth in secondary school enrollment in the State of New York was 75 per cent., as compared with 31 per cent. in Massachusetts. To each 10,000 of the population, Massachusetts reported in 1902, 162 secondary school students. In 1902 the State of New York outside of Greater New York had 174; Greater New York, excluding private schools not in the University and preparatory departments of colleges, reported only 74.

The small incorporated villages in the State of New York provide a high school education for a much larger proportion of the population than any other localities in the State, 459 to each 10,000. Next come the cities of the State other than New York, with 164, then the City of New York as above with 74, and last the rural districts with 59.

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# IX

# DISCUSSIONS

## THE EDUCATION OF THE NEGRO IN ITS HISTORICAL ASPECTS

From earliest times subject peoples have been struggling thru the several stages of dependence and ignorance toward freedom by rebellions and revolutions; but that a dominant race should undertake to elevate the enslaved to liberty, intelligence, and citizenship is without precedent. This, together with the magnitude of the undertaking in the millions included, and the depths of animalism and ignorance out of which they must be raised, makes it of historic importance, and one to which the student of educational history will give profoundest attention. It will be the purpose of this paper to notice wherein the experience of the past is repeated, what new elements enter into this experiment, and what the promise of the future.

Race development follows the laws and order of the individual, from dependent childhood to self-directing manhood; and however much this order may be modified in time and method, the order itself and its laws cannot be superseded. Inasmuch as the development of child-life is from simplest dependence thru growing strength and self-direction to independent manhood, government, beginning as purest paternalism, is gradually modified, taking on the democratic type until we see the children grown to manhood and womanhood, when parents and children gather at the common fireside, each in his own individuality, but together conferring in freedom concerning mutual and individual interests. The father, who began as a loving autocrat, is now sitting, *primus inter pares,* in the democracy of his own building. That this ideal of family life is often missed may be due to either of two causes. Authority may be despotic, and may either subdue the spirit of the children to a willing or forced acquiescence to the order of the parents, and at the sacrifice of freedom and independence,

or it may provoke revolt and a breaking of home ties in the interest of a larger life of freedom. On the other hand, parents in tender love for their children, and fearing the dangers of exposure in leaving home may, by the constraints of affection and the comforts and security of the home, sap their courage and their spirit of adventure and endurance, and so reconcile them to the narrow and safer sphere of domestic life.

Two important facts, therefore, stand out clear in the family history. First, paternalistic forms of government yield reluctantly to the demands of the more advanced democratic; and second, the transition of life from conscious dependence and willing obedience to that of self-directing manhood is a period of danger. This is the adolescent period of youth, at which appears the migratory impulse toward some larger life and new relations. The spirit of adventure is stimulated by developing courage, which, without the restraints of deliberate judgment, becomes rashness, and without well-defined and worthy ideals degenerates into the dissipations of animalism. And so the follies, mistakes, and evils that attach to this critical period are urged by sober paternalism against relaxing the restraints of authority by which order is maintained and habits are fixed.

Now the state or society, as the family, has its two divisions, the governing,—king, oligarchy, aristocracy,—and the governed, namely, the people,—traders, artisans, peasants, serfs, or slaves. The governing power directs the life of the people, provides for their welfare, and determines their position in the economy of the state. In the history of education there have appeared three well-defined stages of advancement. At first, education was exclusively for the governing class. Schools were for those who were at leisure (*schola,* leisure); a liberal education was for freemen (*liber,* free). In old Sparta and in Athens the slaves outnumbered the citizens eight or ten to one, yet for none did those liberty-loving people open the way to the culture of freedom save to their own free citizens. In later European history—and this is the second stage—it is recognized that there is a community of interest between the governing body and the governed, and that intelligence and manhood in the entire citizenship are for the security of the state.

These nations have, accordingly, established systems of popular education, but with this characteristic, that they are founded upon the traditional class distinction of master and servant, nobility and commonalty, the leisure class whose support is secured by inheritance, and the laboring classes whose livelihood is the reward of their industry. In every country in Europe the people, consciously and unconsciously, recognize the limitations within which they have been educated. Paternalistic authority removes in very conservative spirit the fetters of political and social constraint from the lives of the people, and it remains to be seen when education will eliminate artificial distinction, and make character, and not genealogies, the basis of manhood and citizenship.

The third stage,—and that which applies to the theme of this paper,—is based upon the principle of universal freedom and the absence of all artificial class distinctions. This new doctrine and its application took form in Europe with the French people. Violently destroying thrones, and obliterating class distinctions in titles, in government, and in education, all Frenchmen are by law made citizens with common rights and common privileges. In the United States, by the Proclamation of Emancipation, negroes have been made free and entitled to all privileges of citizenship. On the part of government the paternalism of the master is at once changed to a recognition of human equality; on the part of the emancipated the change is abrupt from physical and intellectual enslavement to a self-directing judgment and individual responsibility. These are the two respects in which this experiment is without precedent. No masters have ever before made so radical a change in the treatment of their servants; and no slaves were ever before so suddenly offered such privileges of freedom with all its responsibilities with such utter want of preparation. It may be asked, as, indeed, it has been, whether it would not have been wiser to follow the European precedent of a progressive emancipation, and by stages thru a free peasantry and a training in mechanical and agricultural industries, under the direction of a governing citizenship, gradually and more safely to society and themselves elevate the negro race to an intelligent citizenship. In theory this would have been the natural

and the safer plan; but, judging from the experience of the past, is it credible that the master could have emancipated himself from his dominant spirit of paternalism and of social and racial superiority? and could the slave have ever emancipated himself from the feeling of servility and inferiority into which he had been trained by the combined sentiment and law of our entire civilization? Is it not probable that we should have developed class distinctions in which culture, social and political honors would have been confined to white people, and in which labor and service would have been assigned to and monopolized by the negro? In such an event—one so probable and yet so incongruous in our American life—one may well question whether the stigma set upon industrial life and skilled labor by identifying them with an emancipated servile race would not have been as great a curse upon the whites as slavery itself.

However, the genius of our government precluded the experiment. Having emancipated the negro the nation is committed by every tradition and principle of its history to guaranteeing him all the rights and privileges of an American citizen. As free, the negro has the natural rights of "life, liberty, and the pursuit of happiness"; and by statutory provision, in common with all American citizens, he is entitled to the privileges of the elective franchise and education. The objection against allowing the franchise to negroes lies ultimately against the false principle of basing it upon citizenship, age, and sex, the evils of which are becoming more apparent as our civilization becomes corrupted and adulterated by dense masses of ignorance that are flooding us from foreign countries. That the franchise should be based upon virtue, intelligence, and loyalty is theoretically granted on all hands; and in the exigencies of the situation in the South it is proposed to effect a partial reform by excluding on the color line at least a large mass of ignorance from the ballot box. The defense of this course is the historic one, that partial justice is better than none, and that inconsistency in the application of an imperfect law is better than a ruinous consistency. It may be justly claimed, moreover, that to deny the franchise to black men is no more a denial of their rights as freemen than to deny them to white women.

The simple question of the franchise, then, is not vital to the elevation of the negro to freedom and manhood. Its significance depends upon whether it is a present expression of an ultimate purpose to limit the educational privileges of the race, to suppress their ambitions, and to exclude them from the callings of culture and political life.

The whole problem, then, is ultimately the one of education. Years ago a bright young negro in Mississippi, in giving his view of the situation, said to us, "The white folks may do the voting if they will let us go to school." In the education of the negro the fundamental and phenomenal lesson was taught in the proclamation of absolute emancipation,—that every negro shall be his own master, and that the world shall be open to him with all its opportunities and with its corresponding responsibilities. This, accordingly, becomes the adolescent period in the life of the race; and this abrupt transition has had its natural consequences in misconceptions of true liberty, and in the riot of animalism which has often outrun their ignorant and untrained judgment. In their ideals of freedom and its callings they have imitated the customs and standards of their masters, and have avoided whatever has been identified with their enslavement. They became a leisure class, bedecking themselves in the fashions of their betters. They dropped the hoe to become preachers, politicians, and legislators. Notwithstanding the absurdity of their conceptions and the evils that have attended, the important effect has been to deliver them from the servility of spirit that slavery engenders; and by these experiences only are they to learn the lessons of personal responsibility, and that character alone gives dignity to calling, and not that calling gives character to the man.

It is the freeman alone who can be rationally educated, who can utilize the advantages of his surroundings and make the best of life for himself and society of which he is a contributing member. In this spirit of freedom and personal worth the negro goes back to the farm and to his manual industries, and is as manly in building his house as in legislating for the state. Industrial schools then become part of a complete system for a free people which ends with the college and the professional schools. And so far as this educational idea has told

upon the masses it has developed a movement along the whole line, and negroes are as freely entering colleges and the professions as the industrial schools. That they are placing greatest emphasis upon the bread-winning vocations is to their present advantage, and is a rational preparation for whatever the future may offer them.

This seems to be the result promised, and that to which the sentiment and principles of the American people are sincerely committed. The problem is still one of serious practical difficulties, yet it is supported by the history and the philosophy of education, and may therefore be pursued with confidence. That there are reactionary influences is not surprising. There are those who insist that the white and Anglo-Saxon race are superior and dominant by divine right. Of this class are those who favored industrial education when it meant a training for a better service to the whites; but as soon as it took on the dignified form of but part of a system for a complete culture of the man as a free citizen they withdrew their approval, and began to question the wisdom of all education. On the other hand, some friends of the negro condemn the policy of giving so large place to the industrial movement, because it is of lower social rank and threatens to degrade the negro to the position of a menial. To the first of these reactionists the verdict of history is that character alone gives rank in perpetuity, and that repression cannot stay progress; and to the second class it is that the high ideals of a free spirit are not degraded by the beginnings of ascent with the lowest rounds of the ladder.

Looked at, then, as an historical problem, it appears that the spirit and intent of emancipation are met in their essential features in securing to the negro his freedom—intellectual, religious, and political—and that whatever limitations may be imposed upon him, either justly or unjustly, in withholding from him the ballot cannot defeat the purpose of his enfranchisement; but by these very restrictions he will be stimulated to endurance and effort, and so develop that sturdier manhood for which every other people of character have paid the same, and even a far greater, price.

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## COLLEGE ENTRANCE EXAMINATIONS IN MATHEMATICS

The paper on "A Comparison of college entrance examinations" printed in the December (1903) EDUCATIONAL REVIEW, presents some very interesting facts and also is very suggestive of conclusions.

It must be evident from the start that examinations made up from the combined opinions of college and secondary-school instructors and submitted to the exacting criticism of a board of educators form a very powerful instrument for shaping the future of the public-school curriculum with particular regard to the unification of the preparatory and non-preparatory work.

Having been one of the examiners in mathematics in the year that is discussed by Mr. Goodwin, it might be of interest to point out some of the matters taken into consideration during the construction of the papers in question.

In the construction of an examination paper one must know the object of the branch, the part it plays in the education of the student and, what is very important, he should be a master of those methods most effective in the attainment of this object.

Mathematics is in the curriculum for one or another of three reasons: either for its everyday practical utility, or as a mental discipline, or as a preparation for special work that the student is to perform later. The methods of instruction in any branch ought to be determined in accordance with the reasons given for its being taught.

In a general way we may classify the methods employed in teaching mathematics, at least elementary mathematics, into two divisions:

I—Methods that tend to cultivate accurate work, a mastery of forms and processes, facility and rapidity of operation.

II—Methods that cultivate the power of applying what has been learned and the power of rigid analysis.

The first treats mathematics as an art; the second treats mathematics as a science. The first develops the power of symbolic expression, the second cultivates the power of independent thought.

The first methods are used in teaching arithmetic and certain parts of algebra. The second are employed in teaching other parts of algebra and geometry.

In making up the paper in elementary algebra we gave primary consideration to these two divisions of methods and from them arose the grouping system employed in this particular paper.

Mr. Goodwin has evidently misjudged the object of the grouping system as used in mathematics, and one may readily see that the system employed in subjects which are made up of various topics, each possessing characteristics of equal importance and representing distinct phases in the make-up of the general subject, would hardly obtain in elementary mathematics, where a mastery of fundamentals is the desideratum.

In writing an examination paper, that which is as important as results is the process by which the result is obtained. A careful study of the papers in question will make evident the importance which the examiners placed on this feature of the work.

I am quite ready to accept Mr. Goodwin's grouping method in the examination on advanced algebra, and here one will find a system that admits of a variety of choice. But I would like to see a grouping system so used that a single group or parts of two groups, of recognized order and rank, will suffice as requirements in the subject.

The one thing which characterizes the Board's papers is not so much an appeal to the memory in reproduction as it is an appeal to common sense in application. It seems to me that the "book work" and the "sight work" referred to in Mr. Goodwin's paper are admirably brought together in the Board's papers in algebra.

We must not forget that altho mathematics is an art the work taken in the public schools is the technique of the art and that our primary object in the teaching of mathematics from this side is to generate a working knowledge of the branches, which means "familiarity with the concepts, fluency in performing the operations, and facility in applying the methods to the important concrete cases." With this in view the Board has made its examinations to test the working knowledge of the student which, in laying a foundation for work to follow, is a prime object in developing technique. That a student shall be able to express himself in exact terms is one of the severest

tests of mathematical study, and any examination which fails to emphasize the important rôle played by exact expression in mathematical development would be overlooking one of the greatest forces which mathematics exerts in the general cultivation of the elements of a liberal education.[1]

Referring to the specific criticisms on the material in the 1903 examinations, I am sure that if anyone will examine the questions carefully, and in conjunction note the full significance of the points of objection, he will find the objections somewhat magnified. The selection of questions referred to in elementary algebra would be very unfortunate, yet I can hardly imagine a teacher allowing a student to come up for an examination without an enthusiastic inclination towards the binomial theorem and the progressions; again, while a knowledge of the processes of H. C. F. and L. C. M. of expressions not reducible to type-forms is one of the few opportunities in elementary algebra to carry a development thru its logical entirety, these topics have been eliminated from the requirements as defined by the American Mathematical Society; a knowledge of the other cases of H. C. F. and L. C. M. depends on the mastery of type-forms and this is tested in question 1. Fractions and literal expressions are treated in various questions, *e. g.*, 1, 14, 15. I should not place too much emphasis on evolution; I do regard fractional and negative exponents as very important topics, but they should be taught in connection with a systematic treatment of the number concept, a phase that is not as yet treated satisfactorily by teachers in general.

I would like to see this study, which Mr. Goodwin has so admirably begun, continued in a systematic tabulation of the actual records of the questions selected by the students in order to obtain the attitude of the students towards the systems of assignment. It may give us some light on the efficiency of the elective system in secondary schools; it may give us an idea of the chief factors which lead to election of topics.

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[1] I would refer the reader to the forceful and masterly paper by Professor Story in the December number of *The school review* on the "Unification of mathematics in the school curriculum."

## KING'S "PSYCHOLOGY OF CHILD DEVELOPMENT"

The review of the writer's *Psychology of child development* in the February (1904) number of the REVIEW casts upon it a reflection which is, to say the least, serious if true. Just why one should be blamed for not presenting original experimental investigations when the expressed purpose was to outline a method of interpretation, does not fully appear, unless such a procedure is, in the nature of the case, illegitimate. An author, above everyone else, should welcome having any errors in his statement of details pointed out. In this case it would have been gratifying if the review had shown the scientific accuracy in which it represents the book under notice as so deficient.

The misstatement of facts attributed to it is real in some cases, in others it resolves itself partly into a difference of interpretation and partly into a misunderstanding of what is actually said. For instance, it is not maintained that acquired characteristics are inherited. The only passage that might be carelessly taken to mean such, is on p. 165, where *habit* is used, not to designate an acquired characteristic, but in a general sense as a trait, the implication of the whole passage being that the trait in question was an inherited variation. Furthermore the material, with the exception of brief references to two articles, is not drawn from the sources claimed by the review, namely, *The Child study monthly, Education*, and the National Educational Association reports, as a glance at the foot-notes will prove. The limitation to the studies used is clearly pointed out and only such of it as seems credible is used at all, and that with much reserve. The mere fact that it cannot all be handled by the statistical method does not warrant our throwing it all away.

Finally, the author is not so sanguine as to expect the standpoint of the book to be insusceptible of criticism, but this the review does not attempt; it does not show that it even understands it.

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# X

# REVIEWS

**Heredity and social progress**—By SIMON N. PATTEN. New York: Macmillan, 1903. 214 p. $1.25 net.

The author of *The development of English thought* and *The theory of prosperity* has here attempted to combine certain biological, psychological, and sociological principles so as to show the conditions under which reform, increased mental efficiency, and social progress in general are brought about, and to point out especially the relative contribution of education and heredity toward this progress.

It is difficult to understand why and for whom this book has been written: it is surely incomprehensible to the lay mind: it is, to say the least, difficult and even irritating to the specialist. Such concepts as acquired characters, surplus energy, emotion, reduction, regeneration, consciousness, enclosed ovaries, memory, social surplus, devolution, visualization, katabolism, imitation, discipline, fear and the like jostle one another in bewildering confusion.

It is, thus, despite the summaries at the close of each chapter, not an easy matter to present a synopsis of the book.

Lasting social progress, the author says, cannot be supposed to take place from the natural surplus since this is continually decreasing, nor can it take place from a temporary social surplus unless this can in some way be transformed into permanent conditions or into mental traits. The problem is to trace the method of this transformation. Since the realms of thought and matter are in close parallelism, the definitions and the descriptions of phenomena taking place in the one realm may be checked by observation of the other. Such a parallelism obtains between economics and biology. On account of these relations we can often raise a generalization made in the one science (secondary law) into a primary law, provided expressions of the same law can be found in the related science. The

trouble that a careful reader is apt to find with Dr. Patten's method is that it is easy to find a parallelism for a given theory by taking from the related science a theory not generally accepted by the best authorities within that science.

In chap. iii. the author denies that acquired characters are inherited. He thinks, rather, that the acquisition of a desirable character gives its possessor a certain material advantage which is shared by his children. There results a movement of population toward the classes above, and here the natural characters find a more satisfactory outlet. Similarly, in biology, the secondary sexual qualities of the male are the natural consequence of the surplus energy created by acquired characters. The secondary characters become primary when, having become useful and essential, they appear in all individuals thru heredity. "Animals do not develop teeth because they eat hard food. They eat hard food because they have teeth."

What we popularly term "character" (ch. xi.) results from an economic surplus which evokes impulses modifying both the organism and the environment, *i. e.*, makes "natural characters." The author has a curious idea of the mechanism of this process. Surplus energy arouses to action dormant, unused portions of the nervous system—portions persisting from previous developmental stages. The instance cited —"Advanced beings may then have fish-thoughts,—imitation, for example,—without any visible fish organs"—is surely not very illuminating as explaining force in character. Would not such thoughts be a backward rather than a forward step?

Acquired characters, which are represented socially by morality, tradition, etc., result from a deficit and have no natural means of expression. They employ, however, "disused inner motor organs," which, being translated, means associations of ideas. The discovery of reasoning, as a recoil from the dissimilar and acceptance of the similar, even in the lowly ameba, may cause a smile to the comparative psychologist, while others may become perplexed at the new classifications of emotions now set forth.

Again, in ch. xiii., decidedly novel psychology is put on the carpet. Patten assails all psychological distinctions not based upon obvious physical correlates. He seems to forget

that, as a matter of fact, psychological analysis has antedated and not followed neurological discovery. Few can subscribe to Professor Patten's sharp opposition of will (katabolism) and attention (anabolism). Nor does the conclusion that "men are good thinkers, that is, innerly anabolic; while women are quick in decision, that is, innerly katabolic" strike us as convincingly demonstrated.

The problem of education is now taken up in the light of all this discussion. Education takes place by differentiation, not, as popularly thought, by addition. "Men and women tend to be different. They must be kept on an equality by an education which shall give to each sex the characters that are natural to the other. Civilized men are good thinkers, the women of their race have strong wills, and education must give decision to men and clear thought to women." "In so far as education molds men and women, it will be more effective if the education of men is in the hands of women and that of women in the hands of men." "Discipline differs from education in that the discipline of men comes best from men and that of women from women." In closing the chapter we are startled to learn that the popular notion, that men have decision while women lack it, is correct after all if applied to primitive peoples. But take away wrath from men and fear from women, as civilization does, and their characteristics are reversed.

"Progress is not the making of the strong, but that protection of the weak by which differentiation becomes possible." "Give the class or dwarfed character a surplus, and spontaneous changes will reorganize society." "Nature will care for progress if men will care for reform."

Contrary to current economical and biological thought, then, progress starts from a surplus, not from a deficit. In viewing the factors of human progress we cannot neglect man's complex economic and industrial adjuncts, nor, on the other hand, can we neglect heredity, for "after economic epochs cease to exist, they live in the mental life they have created."

The methodological defects of Professor Patten's book lie in the overstraining of the principle of analogy and in what might be termed "cumulative speculation." The following difficulties

of greater or less importance may be mentioned at random. In what sense can an emotion have no brain centers and yet be "centrally excited"? What evidence have we that the process of "reduction" is a general phenomenon of cell life? How can a germ-cell be unaltered in structure by the somatic cells and yet "reflect in itself the essence of the changes" in them? What evidence have we for the "two centers of activity" in every cell? Does not histology teach us that both germ-cells and brain cells are highly specialized? Is it not absurd to hold both that the *nerve* is highly specialized and that the *nerve-cell,* of which the nerve is but an outgrowth, is unspecialized? Is there, above all, the suggestion of any evidence that the nervous system (which arises from the ectoderm), is composed of inclosed germ-plasm (which is associated with the mesoderm)? How can visualization and memory be "opposing tendencies" when, by the author's own description, the former depends upon traces of past experience? Why does consciousness have to be, and is it, continuous?

The author intimates, by a quotation prefaced to the book, that if he is "absolutely and thoroly and persistently wrong," he will discover it by knocking his head against a fact. A perusal of some of the standard works on embryology, histology, and psychology might reveal a few.

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**A new school management**—By LEVI SEELY, Ph. D. New York: Hinds & Noble, 1903. x + 329 p. $1.25.

This, a volume of 329 pages, makes another addition to the long list of books of the same character now before the school world. It consists of a repetition of what has been so many times printed, differing only from others in that it presents the experiences and notions of the author. These, in a general way, are coincident with the experiences of hundreds of others. The statement of the author in the preface, "It is very likely that many of the discussions presented will be criticised as commonplace," seems to me the fairest and most complete review of the book. One is discouraged in being compelled to believe that the matter and material in a book of this

kind can be helpful to schoolteachers. It is difficult to realize that the statements with which the pages are crowded, and the methods and devices which are suggested, can be new. One is led into the Valley of Despair in being forced to conclude that the schoolteachers of the country need, and are expected, to read such text-books.

The author tells us, with regard to a letter of application for position as teacher, that, "first (p. 26) of all, it should be in good English."

Is it possible that applicants for teachers' positions need to be told that a practical knowledge of the English language is required?

It is true that "very often teachers have followed practices, good or bad, without knowing why they have done so." So has every other man.

The table of contents with chapters headed, "The Personality of the teacher," "Preparation and responsibility of the teacher," "Punishment," "The Incentives to school work," etc., etc., portray a part of the nature and instinct—if a human being has instinct—of all teachers who enter the schoolroom.

The book opens with a chapter on the personality of the teacher. It will be difficult for anyone to find in that chapter any required distinct attribute that is not quite as requisite in any member of any other profession, or in any other than a teacher's line of life. It might well be entitled: "The Required personality of an intelligent man."

The pioneer work of this sort, namely, Page's *Theory and practice*, a book of half the size of this, contains all that one finds in the work before us. The author has been deeply impressed by some of the German schools, where the methods and the general conduct have been observed by visitors to be manifestly inferior to the best American schools.

We can give no better notion of the general character of the work than to select one chapter as an illustration. For this purpose we select chapter 18, "The Duty of the teacher." The author tells us, first, that the school is for the children, and a teacher's first thought should be for them: he should look out for their health; he should teach the bad effects of improper food; he should instruct the children as to what is

right. He quotes a Leipsic teacher as instructing the pupils that only stale bread should be eaten, which was an army regulation in the United States fifty years ago. He reviews the reiterated advice to care for the pupil's eyes, observing when the text is too near the face; and quotes, "It is the teacher's duty to aim to secure a well-balanced development of all the powers of the child."

He instructs the teacher on duties to parents, which duties are self-evident; he enlarges upon parents' meetings; he writes that the teacher's duty to the community is the same as that of every other member of the community; he instructs the teacher that his duty to the school board is that of a dignified, pleasant, intelligent, and polite citizen; he reminds the teacher that his duty to his profession is that ethical duty which belongs to every other profession, and therefore is not special instruction to a schoolteacher.

He advises him to read pedagogical literature; to attend teachers' association; to observe professional etiquette in personal contact with others; to be prudent in his conversation and careful in his treatment of his successor, and he urges that the teacher take care of his health. The fact is, the teacher's life is of just as much account to him as the mechanic's life is to him, or the lawyer's life is to him.

Take the chapter to which reference is made as a whole; scarcely a sentence is in it that is not equally applicable to every intelligent person.

Condemnation of this book must be withheld, because seldom can one read in it that with which he is not in accord. Condemnation is impossible except from the point that it is largely a useless addition to the thousands of printed pages containing commonplace talk about the teacher, thereby separating him from the work and duty and pleasure of an ordinary intelligent citizen. One can scarcely believe that a volume like this will be sold and read extensively except by those whose love and personal relations to the author have made his writing of particular interest to them, because they have known him and loved him. The fact that such works are not rare is no ground for personal criticism. The writer makes adverse criticism to this, and all other such books as useless to

the pedagogical world, even tho written by one of the greatest and best schoolmen in the country, and even tho he may have been urged by his intimate friends to put his experiences, so much like thousands of other experiences, into print.

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**Lectures on the logic of arithmetic**—By MARY EVEREST BOOLE. Oxford: The Clarendon Press, 1903. 144 p. 50 cents.

In somewhat the same spirit shown in her monograph on *The Cultivation of the mathematical imagination,* which appeared a year or so ago, Mrs. Boole has here undertaken to prepare a series of papers on arithmetic. The title is a misnomer, for the book is not made up of lectures, still less of lectures on logic, and least of all of lectures on the logic of arithmetic. But many good works have misleading names, and the only question of importance after all is as to the contents.

The book is really a collection of lessons on certain topics in arithmetic, types intended to suggest to other teachers a more rational treatment of the subject. It is not wanting in sound principles of education, often stated with a terseness that commands the interest of the reader, at times somewhat commonplace, but always useful. Of these the following are types: "It is of primary importance that children should clearly distinguish between what they do or recite because they are told to do so, and what they themselves grasp or see"; "Some of the worst mental habits are induced by the practice of teachers making a statement as if *ex cathedra,* and then proceeding to bring forward proofs of its truth," as is the case with Euclid; "As a matter of fact the arithmetic of grown people is largely occupied over questions of food supply and of personal or family interest. To place children's ideas about such subjects on an honest basis and give them a social direction would surely tend more towards ethicatizing the community than the setting up of topics of fictitious interest which is either imperfect in itself or but partially understood by them." It is in sentences like these, rather than in her model lessons, that Mrs. Boole shows her strength.

And yet the lessons themselves are often suggestive. The first, for example, on "How men learned in old times," has quite a delightful sketch of the "Story of Ab," telling the genesis of the number concept, and the struggles of our remote forebears towards a primitive language and a rude number system. The second one, too, "On counting by tens," turns the class into a set of shepherds keeping tally on their flocks, quite as sheep were doubtless counted in the days before Thoth and Cadmus and Menu were. The other lessons are not so good, but each has some suggestive point that makes it worth the reading.

But there are several features which impress one less favorably, and which militate against any large influence for the book. One is the author's style. She talks to children from a pedestal, while desiring to speak as one of them. For example, in a lesson on "Dis-membering and re-collecting" (not a very suggestive title, nor lesson either), in the midst of talk of picnics and fairies, the children are admonished that "human beings, you and I for instance, are finite creatures," a style of sentence by no means exceptional in the book. It would be too much to expect the charm of Lewis Carroll, but surely this is quite the antithesis to the style that makes his writings classic.

Another fault has been allowed to creep in thru the very delight of story-telling, the fault of unguarded statements. For example, Mrs. Boole says that "at last, when people found out how to write, it came natural for them to make one in the left-hand place of the paper stand for ten in the right-hand place." Of course there was no paper then, when writing was established, and the abacus intervened for long ages before people wrote numerals on parchment, and again long ages passed before our place value was established, and it was so artificial that the Middle Ages had reached their zenith before the zero was at all common.

And furthermore, several of the educational precepts advanced are exceedingly doubtful, as when teachers are advised to have children count "ten, ten-one, ten-two, ten-three," and so on, and to avoid the use of fingers in counting for the reason that "counters can be arranged in convenient patterns, whereas

fingers are much less convenient." And it is doubtful if the teacher who has some hesitation in following the plan of giving apples to half a boy, and nuts to a quarter of a monkey, is likely to be convinced of her error by the author's assurance that " let us once learn to think of the human mind as intended to build up the material sciences round an organic skeleton made of acts of positing the unit, negation, fraction and reconstruction of the broken unit, and our estimate of the relative value of many things in education will undergo rapid change!"

What impresses one as best in the book is the true ring of sincerity, the honest desire to improve the presentation of arithmetic, and for this it is to be commended. What impresses one as least worthy is the style, the lesson plans so ill wrought out, and certain vagaries which are harmless with a strong creator, but which would be pernicious with a mediocre disciple.

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# XI

## NOTES AND NEWS

**Educational Reform in New York State**

The happy prospect suggested in the last issue of the REVIEW is in sight. A bill has been passed by the legislature of the State of New York, and signed by Governor Odell, which puts an end to the squabbling and fighting of the two existing educational departments of the State, and unifies under one board and one executive all of the vast administrative machinery of the State's educational system. As in the case of the reform legislation obtained for New York City in 1896, this act is epoch-marking. It should be clearly borne in mind, however, that the act is an administrative measure only. The State's relation to schools and colleges, to libraries and museums, and to admission to the several professions is in no wise changed. The State Superintendent of Public Instruction neither gains nor loses any powers or prerogatives; but after April 1 his office is merged in that of the new Commissioner of Education. The Regents neither gain nor lose any powers or prerogatives, except the power to elect the immediate successor to their present Secretary; but after April 1, the present duties of their Secretary devolve upon the new Commissioner of Education. The long-standing quarrel is ended by disarming the combatants.

The new Commissioner of Education of the State of New York will be a powerful and influential officer. He will probably be chosen by the two houses of the legislature, sitting in joint meeting on March 3. It is an open secret that the legislature wish to elect President Andrew S. Draper of the University of Illinois to be the first Commissioner. Every possible influence will be brought to bear to secure his acceptance. If he accepts, New York State will enter upon a period of progressive and aggressive educational advance and leadership under the happiest auspices.

Why could not so statesmanlike an act as this have been passed unanimously, and without any mention of party lines or partisan interests? The bill was a purely educational measure, formulated by educators; it was attacked as a political measure drawn by partisans. The answer is not far to seek. The Secretary of the Regents, Mr. Parsons, himself the most indefatigable politician ever connected with the State school administration, was intent on defeating the bill, and he originated the charge that it was a political measure and induced many sincere, but ill-informed, persons to believe it. At the public hearing, on February 9, this charge was utterly demolished, but it was repeated nevertheless until the very last minute.

It is notoriously "unsafe to prophesy unless you know"; but the EDUCATIONAL REVIEW ventures this prophecy:

Under Commissioner Draper the New York schools and colleges will enter upon a period of great prosperity, absolutely free from direct or indirect partisan or ecclesiastical interference. Regents whose terms expire will almost, if not quite, uniformly be re-elected, regardless of their party affiliations. The subordinate officials will be chosen for merit and for merit only, and the State will get rid of the educational politics which are as blighting to the schools as any party politics can possibly be.

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**Law and Order and the Schools**

The Educational Council of the Colorado Teachers' Association, comprising the leading teachers and administrators of the State, has issued a forcible appeal to parents, teachers, school officers, the public press, and the courts, in behalf of law and order. The appeal opens by quoting the resolution of the National Educational Association, adopted at Boston, pointing out the relation which exists between proper school training and discipline and the maintenance of law in the community at large. The appeal continues with these forcible words:

The Educational Council of Colorado, after careful inquiry during the past year into existing conditions in schools and colleges thruout the country as regards decorous conduct

and obedience to law among pupils and students both in and out of school, regrets to affirm as its deliberate opinion that these conditions, at least in many localities and institutions both in Colorado and elsewhere, are such as to call for the serious consideration of all thoughtful citizens.

This opinion is founded upon disgraceful occurrences which are alarmingly frequent and of which the following are typical illustrations:

1. The organization in all grades of schools from the elementary school to the college, of "strikes," so called, to compel those in authority to grant vacations, lengthen recesses, discharge or reinstate teachers, remit the punishment of fellow students who are under discipline for committing serious offenses; thus often paralyzing, in whole or in part, the work of the schools.

2. The treatment of school and parental authority with insolence and contempt when it is opposed to the carrying out of student ideas of "fun" or whims born of the mob spirit.

3. Riotous conduct on the street, in public conveyances, theaters, public halls and other public places in utter disregard of the rights of others and of the refinements of demeanor that should characterize ladies and gentlemen, apparently under the assumption that membership in educational institutions justifies such conduct.

4. Deliberate insults to teachers and others in authority under circumstances which, if tolerated, render it practically impossible to exercise discipline or maintain authority.

5. Class contests which cripple, temporarily at least, the work of the school, and lead to the invasion of private dwellings, the destruction of public and private property, thus entailing not only pecuniary loss upon the community, but also irreparable loss of time upon students and teachers.

6. Serious bodily injuries and even death, resulting from hazing, fraternity initiations, and class fights.

7. The subordination of everything else by students and too often by instructors to the preparation for athletic contests, thus making a business of athletics to the detriment of true ideals of sport.

The frequency of such occurrences fully justifies grave ap-

prehension lest the schools, instrumentalities which exist at the expense of the state for the purpose of protecting the state by training for intelligent patriotic citizenship, may become rather a menace to the state by bringing together large numbers of impulsive, irresponsible young people under conditions favorable to manifestations of mob-spirit and without restraints sufficient to prevent or control such manifestations.

While society cannot expect immunity from youthful indiscretion, lawlessness, and crime, the school and college should ever stand firmly for order, reverence for, and obedience to, law, and, tho ephemeral disturbances may cause annoyance and even apprehension, the tide of sentiment among educators should ever set strongly toward higher standards of conduct and social service.

The oft-repeated plea that "boys will be boys" and that "young people ought to be allowed to have a good time," is not worthy of a moment's serious consideration when offered in extenuation of such acts as those enumerated. We deplore the sentiment that seems to have gained so strong a hold upon some minds that dissipation, rowdyism, and lawlessness are essential to the happiness of young people or that they add anything to their real enjoyment; and it is with a view to making their school life more truly happy that we appeal to parents and teachers generally to give their fullest co-operation to all efforts to eliminate these evils from student life.

There is no more important function of school and home training than to teach obedience to law and respect for lawful authority, without which popular government cannot long endure, and when our young citizens imbibe the notion in any way that deliberate violation of either school law or civil law is a matter to be treated lightly, there is cause for grave apprehension. It is unpatriotic and un-American to allow a schoolboy to suppose that what the law justly characterizes as a crime is only a harmless prank when committed by himself, yet it is only too evident that laxity of school and home discipline is producing just this impression upon the youth of this age and generation.

We are convinced that the conditions which we have enumerated are due in large measure to dangerous excesses in the en-

couragement of class spirit, athletic contests, and social pleasures. Such recreations are undoubtedly good and wholesome when kept within reasonable bounds, but it does not follow that they can be given a free rein without bringing serious results. There should be the fullest co-operation between the home and the school in an earnest effort to put them upon a proper basis as valuable auxiliaries to educational work instead of permitting them to overshadow more important matters.

We earnestly appeal to directors and boards of control in all classes of schools to strengthen the hands of those who are in direct charge of the management and discipline, both by effective legislation against lawless acts and by firm support in the enforcement of such legislation. With special earnestness do we address this appeal to boards of control in the higher institutions, for it appears that one of the chief incentives to lawlessness in elementary and secondary schools is the example set by students in the higher institutions.

We earnestly appeal to the representatives of the press to aid the cause of education by giving fair and uncolored accounts of lawless and rebellious conduct on the part of pupils and students, and by refusing to represent the perpetrators of lawless deeds as heroes or martyrs, or by entirely ignoring such occurrences. We also urge that careful supervision be exercised over school and college papers with regard to such accounts.

We express our gratitude to those courts which have cooperated with other educational agencies in convincing children and youth that any misdemeanor or crime will meet with the punishment it deserves, and that pupils in the public schools are amenable to the law to the same extent as other citizens. We deem it a wrong both to society and to young offenders themselves to allow them to assume that they are privileged characters and may trample the laws of their country under their feet with impunity, when they should be made to understand that a crime is a crime, whether committed by a schoolboy or by someone else. We feel it would be a serious error for any court to discharge an incipient criminal without an attempt to impress him with the seriousness of his offense.

Fully realizing that the home, the school, the press, and the courts have individually done all they could do to aid in sup-

pressing lawlessness among young people, we believe that existing conditions demand the energetic co-operation of all these agencies.

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Here is an illuminating paragraph from a recent address by Professor Michael E. Sadler, as reported in the London *Journal of education*. There are still some persons in America who should lay it to heart:

One of Mr. Lowe's fallacies lay in the hard-and-fast line which he drew between elementary and secondary education. He evidently thought of elementary education as being for the poor, and secondary education only for the "middle-class." But the new point of view is that it is the business of the state to keep open the ways of intellectual opportunity from the bottom to the top of the national system of education, in order to secure as much as possible of the advantage which accrues to a community from making the best of great abilities, however humbly born. Those who take this view cannot rest satisfied with the refusal of Government aid to secondary education. They regard the latter as being, in part, a necessary outcome of the extension and improvement of elementary schools. And, therefore, they claim for it state supervision and a measure of state aid. Thus by a sort of capillary action the idea of state intervention rises up from the level of elementary education, to which Adam Smith would have confined it, to the higher stages of instruction, secondary and academic.

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It may be well for students of educational progress to take careful note of the work now going forward under the direction of President Seerley of the State Normal School at Cedar Falls, Iowa. The trustees have just established there a new four-year course of study, entrance to which is based upon high-school graduation, for the purpose of training students who look forward to becoming superintendents, high-school principals, and departmental teachers in either secondary or elementary schools. This new course does not displace, but supplements the older courses long established for the training of elementary school teachers and specialists in various departments of elementary school work.

Much attention is also given to physical education. A new and well-equipped gymnasium is in course of erection, and it is planned to give personal attention to the physical needs and development of each student.

One of the most important elements in the new work at Cedar Falls is the ample provision made for training teachers in special fields of secondary school work. The result of such an undertaking as this must be to raise the standard of scholarship thruout the high schools of Iowa and to knit the entire school system of that State more closely together.